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PROJECT RULISON - SITE EVALUATION

PRE-SHOT R-EX WELL TEST DATA

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AUSTRAL OIL COMPANY INCORPORATED
CER GEONUCLEAR CORPORATION

Contract No. AT-(26-1)-429 between the United States of America acting jointly through the Atomic Energy Commission and the Department of Interior and the Austral Oil Company Incorporated and CER Geonuclear Corporation, Program Manager.

October 20, 1969

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PROJECT RULISON - SITE EVALUATION

PRE-SHOT R-EX WELL TEST DATA

INTRODUCTION

The technical objective of Project Rulison is to determine whether nuclear stimulation has potential as a commercial completion technique in the low productivity, deep thick, gas bearing Mesaverde formation in the Rulison Field.

Project Rulison is expected to provide additional data to evaluate the economic feasibility of nuclear stimulation. The technical data on the reservoir performance, before and after the shot, are needed to evaluate the feasibility of nuclear stimulation as a commercial method of unlocking the tremendous reserves of natural gas in the Mesaverde formation. Other information to be gained includes the effect of increased temperature and pressure on the device performance at the greater depths encountered in the Rulison area, the amount of radioactivity contained in the gas, and the seismic and structural response in the area.

This report covers the pre-shot testing of the exploratory well, R-EX (Hayward 25-95), which is in close proximity to the emplacement well. (Figure 1)

Core data and well logs from R-EX have already been placed in the open file and hence will not be included in this report. The results of the hydrologic testing of the well have been reported in the open file literature by the USGS⁽¹⁾.

R-EX WELL HISTORY

Detailed drilling, completion and testing summaries are included in the appendix, but for completeness, a brief outline of the drilling, completion and testing procedures are included here.

R-EX was spudded November 9, 1967 in the SW-1/4, Section 25, T-7S, R-95W, Garfield County, Colorado. The well was drilled to a TD of 8516, 7-5/8 intermediate casing was set at 6367 and a 5-1/2 liner set at 8514. (See Figure 2)

Eleven conventional cores were taken, six in the Wasatch and five in the Mesa-verde formations. Fourteen side wall cores were taken, of which twelve were recovered. DST's and flow tests were conducted at selected intervals. Details of each of the tests are covered in the hydrologic report and in the completion summaries.

(1) Voegeli, P. T., Geology and Hydrology of the Project Rulison Exploratory Hole, Garfield County, Colorado, USGS Open File Report 474-16, April 4, 1969.

The Mesaverde formation was perforated in four selected intervals from 7302 to 8464. Individual tests were run in each interval and flow tests and buildup tests over the entire gross section. Results of these tests indicated severe formation damage was present throughout the interval. During September 1968, three separate temperature surveys were run. The data are included in the appendix.

In order to determine true formation characteristics from flow and buildup tests, a typical interval (8140' - 8172') was isolated and given a small volume fracture treatment so that the true reservoir properties beyond the damage radius could be evaluated. The fracture treatment consisted of 5,500# 20/40 mesh sand and 5,500# glass beads. The treatment record is included in the appendix.

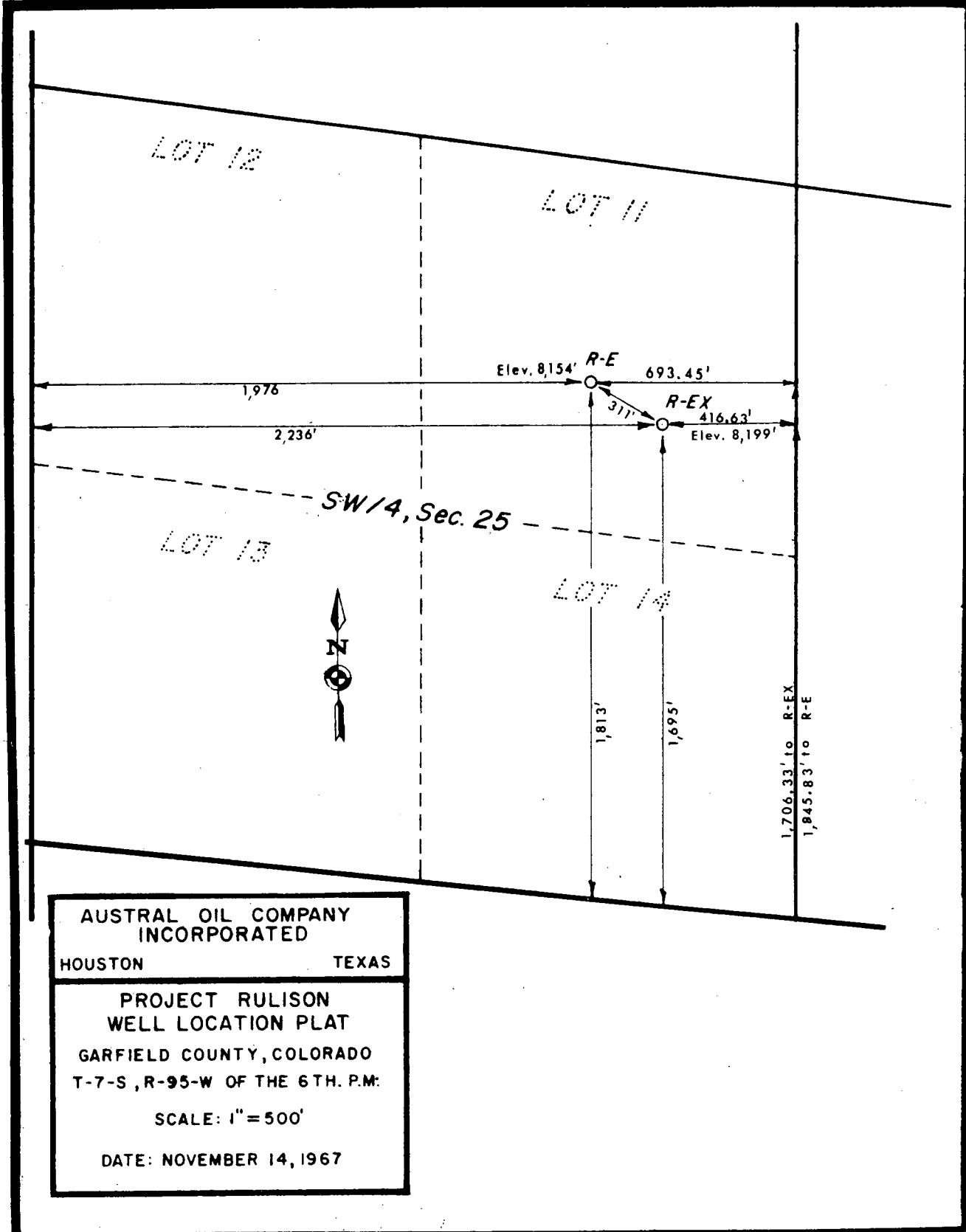
After completion of the fracturing treatment on 10/05/68, the well was flowed until 10/11/68 to allow it to clean up. The well was shut-in from 10/11/68 to 10/16/68 for buildup prior to testing. From 10/16/68 to 10/23/68 attempts were made to test the well but equipment failures negated this effort. On 10/23/68 Flow Test No. 1 was started but was terminated on 10/29/68 due to wellbore mechanical problems.

The well was shut-in for Buildup No. 1 from 10/29/68 to 11/14/68, at which time the well was blown down to change out the tubing and install the tree. A leak around the pipe rams on the BOP's had occurred after about 360 hours of the buildup and the leak had continued for the remainder of the buildup test. The bottom hole pressures were obtained using a Ball Brothers Pressure Sentry MK-9P, 0-3000 psi element, landed at 8000' KBM. Figure 3 is a schematic diagram of the surface testing and production equipment.

The pressure-rate-time data for Drawdown and Buildup Test No. 1 are presented in Tables I and II, and Figures 4 and 5 in the appendix.

Due to mechanical problems occurring during the test period and also because the duration of the test was not sufficient to allow evaluation of the true formation characteristics a second flow period and buildup period was necessary.

The well was shut-in from 11/14/68 to 12/12/68, at which time Flow Test No. 2 was initiated as a constant rate drawdown test at an average rate of 32.6 MCF/D. The Ball Brothers surface recording bottom hole pressure gauge, was used along with a Deadweight surface pressure measurement. The flow test was terminated on January 9, 1969 and Buildup No. 2 was recorded from January 9 to March 15, 1969. The data for Drawdown and Buildup Test No. 2 are found in Table III and IV and Figures 6 and 7.



LOCATION R-E AND R-EX

R-EX
(HAYWARD 25-95)

SCHEMATIC DIAGRAM

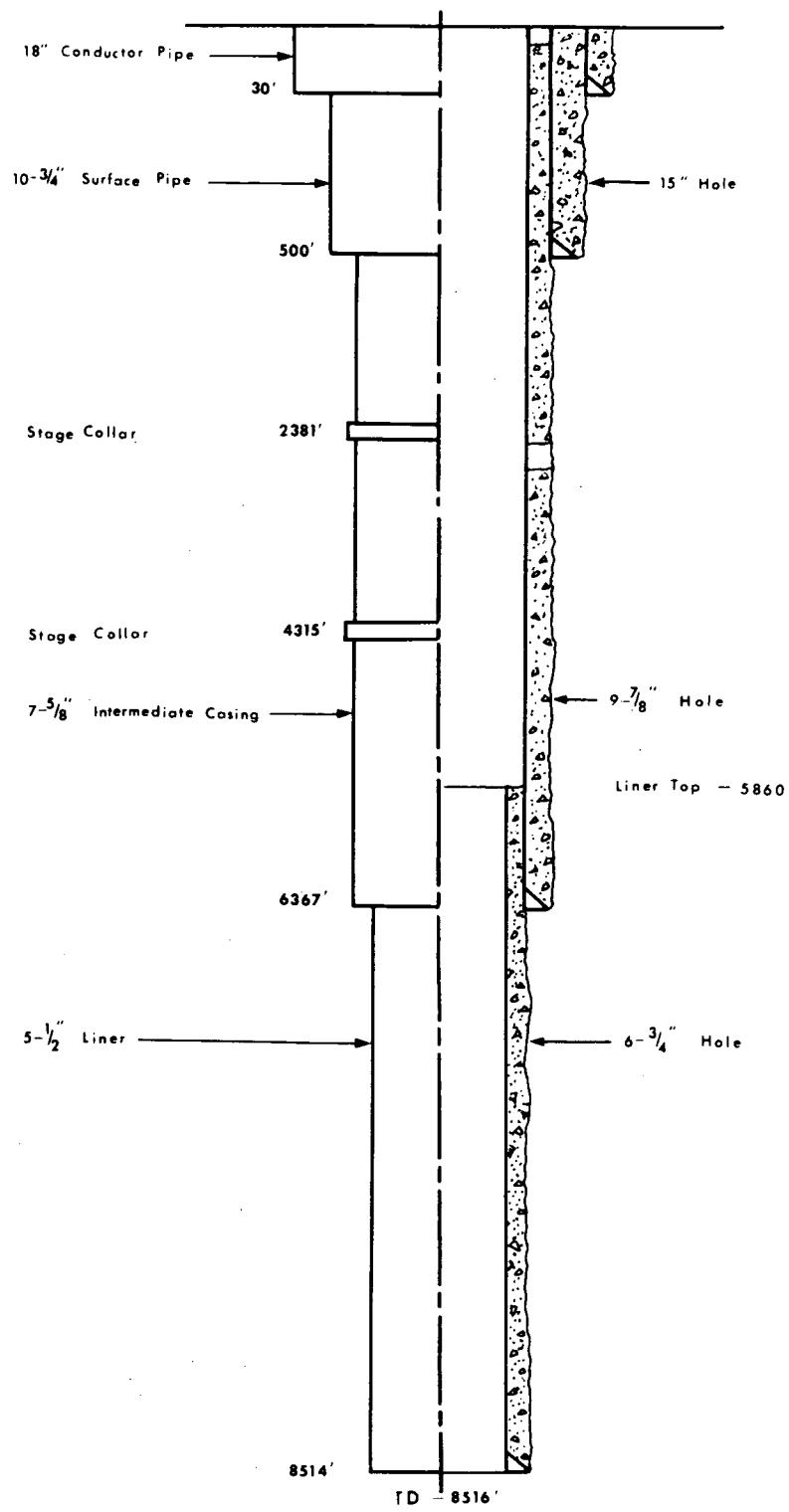


FIGURE 2

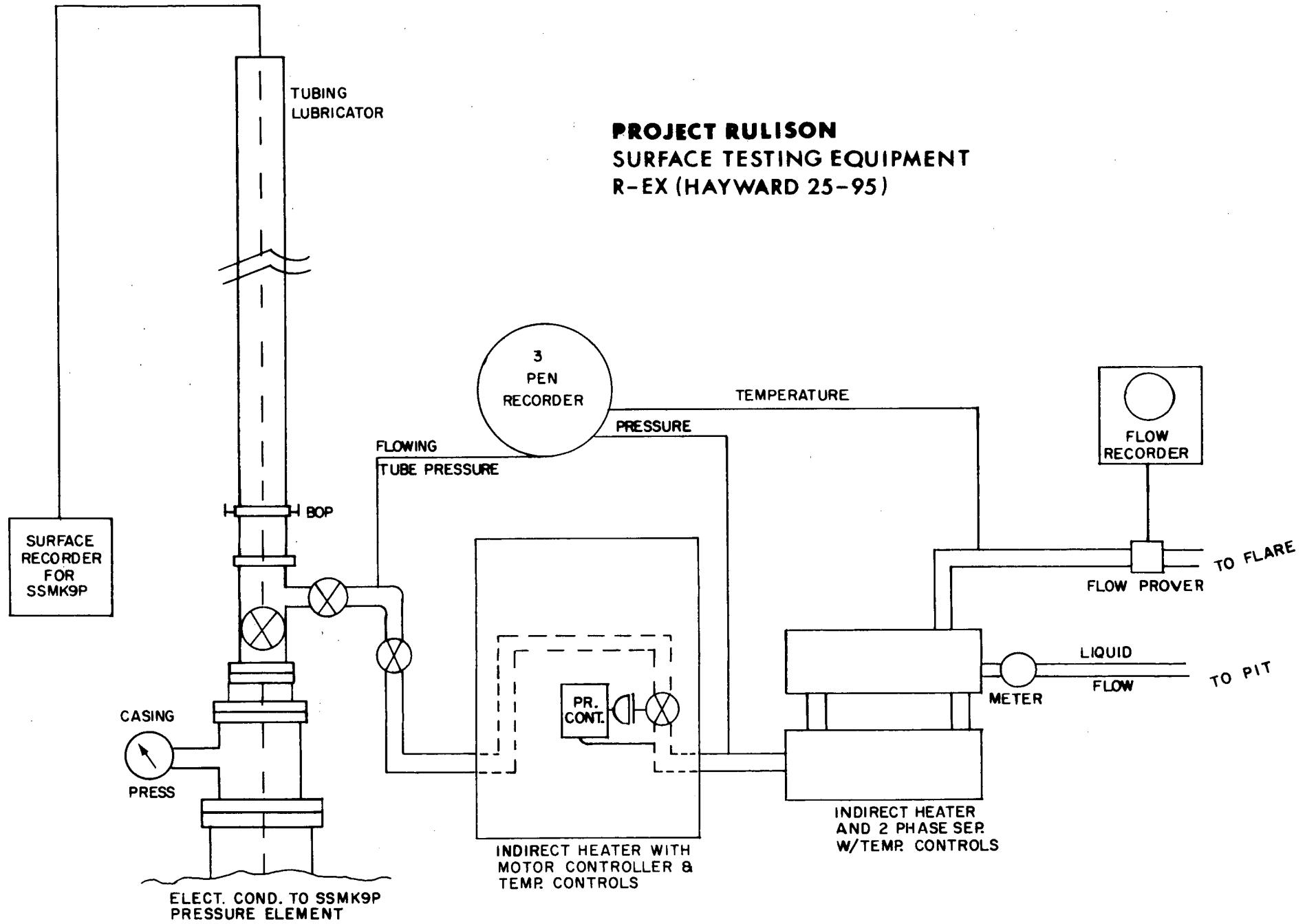


FIGURE 3

TABLE I

Pressure Drawdown Data
Flow Test No. 1

Hayward 25-95 (R-EX)
Rulison Field
Mesaverde Formation
Interval Tested 8148-8172
10/23/68 to 10/29/68

| <u>Date</u> | <u>Time</u> | <u>ΔT</u> <u>(Hrs)</u> | Bottom | | | <u>Flow Rate (mcf/d)</u> | <u>Cum. Liquid Production (Bbls)</u> |
|-------------|----------------|---|--|---------------------------------------|---------------------------------------|----------------------------------|--|
| | | | <u>Hole Pressure (psia)</u> | <u>Casing Pressure (psig)</u> | <u>Tubing Pressure (psig)</u> | | |
| 10/23/68 | 9:00 am | 0 | - | - | - | 1500 | - |
| NOTE: | | | 9:00 - Blew well to clean out H ₂ O - Reduce pressure to run pressure sentry 11:00 to 11:40 Ran MK 9P Sentry to 8000' KB | | | | |
| 11:40 | 2.6 | 765 | | | | 0 | |
| | 11:40 to 12:30 | Shut well in to connect control unit and separator. | | | | | |
| 12:00 | 3.0 | 1011 | | | | 0 | |
| 12:30 | 3.5 | 1303 | | | | 0 | |
| 1:10 pm | 4.16 | | | | | 1500 | |
| 1:20 | 4.3 | 1204 | | | 690 | 1500 | |
| 1:30 | 4.5 | 1005 | | | 500 | 1500 | |
| 1:45 | 4.75 | 747 | | | 300 | 1500 | |
| 2:00 | 5.0 | 536 | | | | 1500 | |
| 2:15 | 5.25 | 642 | 1240 | | 240 | 186 | |
| 2:20 | 5.37 | 647 | | | | 186 | |
| 2:45 | 5.75 | 677 | | | | 186 | |
| 3:00 | 6.0 | 712 | | | | 186 | |
| 4:00 | 7.0 | 776 | | | 260 | 186 | |
| 5:00 | 8.0 | 818 | | | 300 | 186 | |
| 6:00 | 9.0 | 841 | | | 340 | 186 | |
| 7:00 | 10.0 | 853 | | | 360 | 186 | |
| 8:00 | 11.0 | | 1240 | | 370 | 187 | |
| 9:00 | 12.0 | 829 | | | 370 | 186 | |
| 10:00 | 13.0 | 800 | 1240 | | 365 | 187 | |
| 11:00 | 14.0 | 794 | | | 360 | 186 | |
| 12:00 | 15.0 | 765 | | | 340 | 187 | |

TABLE I

Page 2

| Date | Time | ΔT (Hrs) | Bottom Hole Pressure (psia) | Casing Pressure (psig) | Tubing Pressure (psig) | Flow Rate (mcf/d) | Cum. Liquid Production (Bbls) |
|----------|---------|---------------------|--------------------------------------|------------------------------|------------------------------|-------------------------|--|
| 10/24/68 | 1:00 am | 16.0 | 741 | | 320 | 187 | |
| | 2:00 | 17.0 | 712 | | 300 | 187 | |
| | 3:00 | 18.0 | 683 | | 260 | 187 | |
| | 4:00 | 19.0 | 642 | | 220 | 187 | |
| | 5:00 | 20.0 | 607 | | 190 | 187 | |
| | 6:00 | 21.0 | 571 | | 150 | 187 | |
| | 7:00 | 22.0 | 528 | | 110 | 187 | |
| | 8:00 | 23.0 | 507 | 1240 | 70 | 187 | (Heading Water) |
| | 9:00 | 24.0 | 671 | | 50 | 154 | 19 |
| | 10:00 | 25.0 | 642 | 1230 | 240 | 187 | |
| | 11:00 | 26.0 | 580 | 1210 | 180 | 186 | |
| | 12:00 | 27.0 | 528 | 1220 | 120 | 186 | |
| 10/24/68 | 1:00 pm | 28.0 | 483 | 1240 | 70 | 186 | 21 |
| | 2:00 | 29.0 | 525 | | 60 | 153 | (Well Loading Up) |
| | 3:00 | 30.0 | 525 | | 60 | 153 | |
| | 4:00 | 31.0 | 466 | | 30 | 193 | |
| | 5:00 | 32.0 | 548 | | 10 | 188 | (Installed $\frac{1}{2}$ " Plate) |
| | 6:00 | 33.0 | 545 | 1240 | 95 | 145 | 25 |
| | 7:00 | 34.0 | 557 | | 90 | 138 | (Installed $\frac{3}{4}$ " Plate) |
| | 8:00 | 35.0 | 571 | | 90 | 139 | |
| | 9:00 | 36.0 | 560 | | 93 | 143 | (Installed $\frac{1}{4}$ " Plate) |
| | 10:00 | 37.0 | 557 | | 94 | 144 | |
| | 11:00 | 38.0 | 548 | | 94 | 144 | |
| | 12:00 | 39.0 | 542 | | 94 | 144 | |
| 10/25/68 | 1:00 am | 40.0 | 536 | | 92 | 141 | |
| | 2:00 | 41.0 | 536 | | 90 | 138 | |
| | 3:00 | 42.0 | 531 | | 89 | 137 | |
| | 4:00 | 43.0 | 528 | | 89 | 137 | |
| | 5:00 | 44.0 | 528 | | 87 | 135 | |
| | 6:00 | 45.0 | 531 | | 87 | 135 | |
| | 7:00 | 46.0 | 531 | | 86 | 133 | |
| | 8:00 | 47.0 | 531 | | 86 | 133 | |
| | 9:00 | 48.0 | 531 | 1230 | 86 | 133 | 30 |
| | 10:00 | 49.0 | 531 | | 85 | 132 | |
| | 11:00 | 50.0 | 571 | | 110 | 119 | |
| | 12:00 | 51.0 | 595 | 1235 | 140 | 119 | |
| | 1:00 pm | 52.0 | 601 | 1240 | 160 | 119 | 31 |
| | 2:00 | 53.0 | 645 | | 180 | 119 | |
| | 3:00 | 54.0 | 665 | | 200 | 119 | |
| | 4:00 | 55.0 | 683 | | 220 | 119 | |
| | 5:00 | 56.0 | 692 | | 230 | 119 | |
| | 6:00 | 57.0 | 695 | | 230 | 119 | |

TABLE I

Page 3

| Date | Time | ΔT (Hrs) | Bottom Hole Pressure (psia) | Casing Pressure (psig) | Tubing Pressure (psig) | Flow Rate (mcf/d) | Cum. Liquid Production (Bbls) |
|--------------|---------|---------------------|--------------------------------------|------------------------------|------------------------------|-------------------------|--|
| 10/25/68 | 7:00 | 58.0 | 698 | | 230 | 119 | |
| | 8:00 | 59.0 | 698 | | 230 | 119 | |
| | 9:00 | 60.0 | 695 | | 225 | 120 | |
| | 10:00 | 61.0 | 695 | | 220 | 119 | |
| | 11:00 | 62.0 | 692 | | 210 | 120 | |
| | 12:00 | 63.0 | | | 205 | 120 | |
| 10/26/68 | 1:00 am | 64.0 | 689 | | 200 | 120 | |
| | 2:00 | 65.0 | | | 195 | 120 | |
| | 3:00 | 66.0 | 683 | | 190 | 120 | |
| | 4:00 | 67.0 | | | 185 | 120 | |
| | 5:00 | 68.0 | 680 | | 180 | 120 | |
| | 6:00 | 69.0 | 674 | | 180 | 119 | |
| | 7:00 | 70.0 | 671 | | 180 | 119 | |
| | 8:00 | 71.0 | 665 | 1240 | 175 | 119 | |
| | 9:00 | 72.0 | | | 170 | 120 | |
| | 10:00 | 73.0 | | | 170 | 120 | |
| | 11:00 | 74.0 | | 1240 | 170 | 119 | |
| | 12:00 | 75.0 | 668 | | 170 | 119 | |
| 10/26/68 | 1:00 pm | 76.0 | 671 | | 170 | 119 | |
| | 2:00 | 77.0 | | | 170 | 119 | |
| | 3:00 | 78.0 | | | 170 | 119 | |
| | 4:00 | 79.0 | | | 170 | 119 | |
| | 5:00 | 80.0 | | | 170 | 119 | |
| | 6:00 | 81.0 | 665 | | 165 | 119 | |
| | 7:00 | 82.0 | 647 | | 160 | 119 | |
| | 8:00 | 83.0 | 642 | | 155 | 119 | |
| | 9:00 | 84.0 | 639 | | 140 | 119 | |
| | 10:00 | 85.0 | 618 | | 130 | 119 | |
| | 11:00 | 86.0 | | | 125 | 121 | |
| | 12:00 | 87.0 | 595 | | 120 | 121 | |
| 10/27/68 MDT | 1:00 am | 88.0 | 589 | | 110 | 121 | |
| " | 1:00 am | 89.0 | 577 | | 100 | 121 | |
| | 2:00 | 90.0 | 565 | | 95 | 121 | |
| | 3:00 | 91.0 | 557 | | 90 | 121 | |
| | 4:00 | 92.0 | 548 | | 85 | 121 | |
| | 5:00 | 93.0 | 542 | | 80 | 121 | |
| | 6:00 | 94.0 | | | 75 | 118 | |
| | 7:00 | 95.0 | 545 | 1240 | 70 | 111 | |
| | 8:00 | 96.0 | 548 | | 70 | 113 | |
| | 9:00 | 97.0 | 554 | | 70 | 114 | |
| | 10:00 | 98.0 | | | 75 | 118 | |

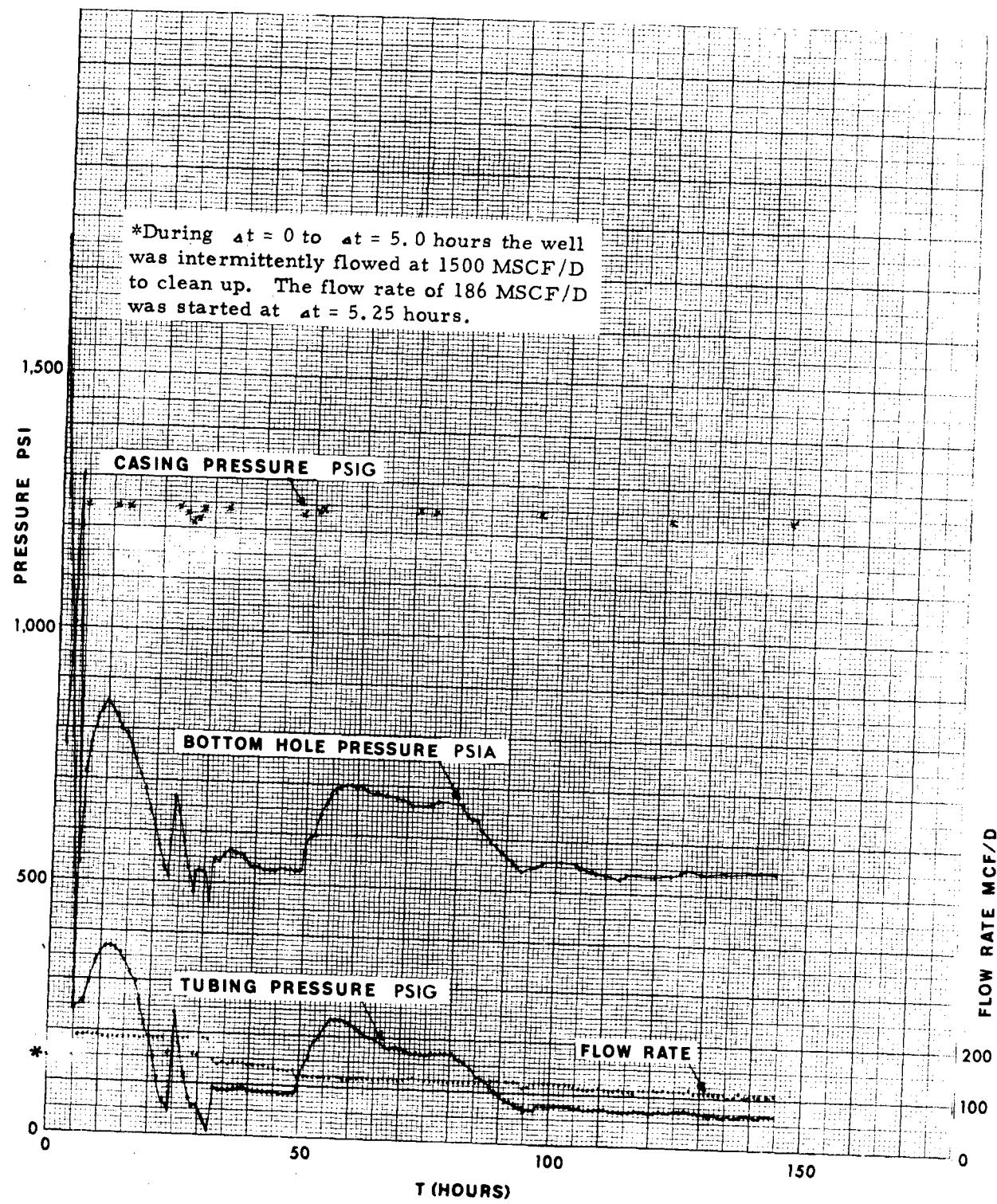
TABLE I

| Date | Time | ΔT (Hrs) | Bottom Hole Pressure (psia) | Casing Pressure (psig) | Tubing Pressure (psig) | Flow Rate (mcf/d) | Cum. Liquid Production (Bbls) |
|----------|----------|---------------------|--------------------------------------|------------------------------|------------------------------|-------------------------|--|
| 10/27/68 | 11:00 | 99.0 | | | 75 | 119 | |
| | 12:00 | 100.0 | | | 75 | 120 | |
| | 1:00 pm | 101.0 | 560 | | 75 | 118 | 43 |
| | 2:00 | 102.0 | | | 76 | 119 | |
| | 3:00 | 103.0 | | | 76 | 118 | |
| | 4:00 | 104.0 | 554 | | 77 | 120 | |
| | 5:00 | 105.0 | 548 | | 73 | 114 | |
| | 6:00 | 106.0 | | | 73 | 115 | |
| | 7:00 | 107.0 | 545 | | 72 | 113 | |
| | 8:00 | 108.0 | 542 | | 71 | 112 | |
| | 9:00 | 109.0 | | | 70 | 111 | |
| | 10:00 | 110.0 | 536 | | 71 | 113 | |
| | 11:00 | 111.0 | | | 72 | 114 | |
| | 12:00 | 112.0 | | | 69 | 110 | |
| 10/28/68 | 1:00 am | 113.0 | 533 | | 70 | 111 | |
| | 2:00 | 114.0 | 536 | | 69 | 110 | |
| | 3:00 | 115.0 | | | 69 | 110 | |
| | 4:00 | 116.0 | | | 69 | 110 | |
| | 5:00 | 117.0 | | | 68 | 108 | |
| | 6:00 | 118.0 | | | 68 | 108 | |
| | 7:00 | 119.0 | | | 69 | 110 | |
| | 8:00 | 120.0 | 536 | | 68 | 108 | 46 |
| | 9:00 | 121.0 | | 1240 | 68 | 109 | |
| | 10:00 | 122.0 | | | 71 | 112 | |
| 10/28/68 | 11:00 am | 123.0 | 539 | | 71 | 111 | |
| | 12:00 | 124.0 | | | 72 | 113 | 47 |
| | 1:00 pm | 125.0 | 545 | | 71 | 111 | |
| | 2:00 | 126.0 | 548 | | 72 | 112 | |
| | 3:00 | 127.0 | | | 73 | 113 | |
| | 4:00 | 128.0 | | | 72 | 112 | |
| | 5:00 | 129.0 | 545 | | 73 | 114 | |
| | 6:00 | 130.0 | | | 69 | 109 | |
| | 7:00 | 131.0 | | | 68 | 108 | |
| | 8:00 | 132.0 | | | 67 | 107 | |
| | 9:00 | 133.0 | | | 68 | 108 | |
| | 10:00 | 134.0 | 548 | | 66 | 106 | |
| | 11:00 | 135.0 | | | 66 | 106 | |
| | 12:00 | 136.0 | | | 67 | 107 | |

| Date | Time | ΔT (Hrs) | Bottom | | | Flow Rate (mcf/d) | Cum. Liquid Production (Bbls) |
|----------|---------|---------------------|----------------------------|------------------------------|------------------------------|-------------------------|--|
| | | | Hole Pressure (psia) | Casing Pressure (psig) | Tubing Pressure (psig) | | |
| 10/29/68 | 1:00 am | 137.0 | | | 66 | 106 | |
| | 2:00 | 138.0 | | | 66 | 106 | |
| | 3:00 | 139.0 | | | 67 | 107 | |
| | 4:00 | 140.0 | | | 65 | 105 | |
| | 5:00 | 141.0 | 545 | | 66 | 106 | |
| | 6:00 | 142.0 | | | 67 | 107 | |
| | 7:00 | 143.0 | | | 64 | 103 | |
| | 8:00 | 144.0 | 548 | | 64 | 103 | |
| | 9:00 | 145.0 | | 1240 | 65 | 104 | 50 |

Well shut-in for pressure build up at 9:00 am 10/29/68

Bottom hole pressure measured with Ball Brothers Research Corp.
 Slim Sentry MK 9P 0-3000 psi element
 Serial No. SS 107-30
 Sentry landed at 8000' KB



HAYWARD 25 - 95
DRAWDOWN TEST NO. 1
10/23/68 TO 10/29/68

FIGURE 4

TABLE II

Pressure Buildup Data
Buildup No. 1

Hayward 25-95 (R-EX)
Rulison Field
Mesaverde Formation
Interval Tested 8148-8172
10/29/68 to 11/14/68

| <u>Date</u> | <u>Time</u> | <u>Δt (Hrs)</u> | <u>Bottom Hole Pressure (psia)</u> | | | <u>Casing Pressure (psig)</u> | <u>Tubing Pressure (psig)</u> |
|-------------|-------------|--|--|--|--|---------------------------------------|---------------------------------------|
| 10/29/68 | 9:00 am | 0 | 548 | | | 1245 | 65 |
| | 9:15 | .25 | 653 | | | | |
| | 9:30 | .50 | 712 | | | | |
| | 9:45 | .75 | 759 | | | | |
| | 10:00 | 1.00 | 794 | | | | 265 |
| | 10:15 | 1.25 | 829 | | | | |
| | 10:30 | 1.50 | 864 | | | | |
| | 10:45 | 1.75 | 896 | | | | |
| | 11:00 | 2.0 | 929 | | | | 370 |
| | 11:30 | 2.5 | 969 | | | | |
| | 12:00 | 3.0 | 1016 | | | 1250 | 460 |
| | 12:30 | 3.5 | 1063 | | | | |
| | 1:00 pm | 4.0 | 1087 | | | | 535 |
| | 1:30 | 4.5 | 1122 | | | | |
| | 2:00 | 5.0 | 1145 | | | | 585 |
| | 3:00 | 6.0 | 1198 | | | | 625 |
| | 4:00 | 7.0 | 1215 | | | | 645 |
| | 5:00 | 8.0 | 1259 | | | | 655 |
| | 6:00 | 9.0 | 1297 | | | | 665 |
| | 7:00 | 10.0 | 1341 | | | | 670 |
| | 8:00 | 11.0 | 1362 | | | | 675 |
| | 9:00 | 12.0 | 1391 | | | | 675 |
| | 10:00 | 13.0 | 1400 | | | | 680 |
| | 11:00 | 14.0 | 1415 | | | | 685 |
| | 12:00 | 15.0 | 1429 | | | | 700 |
| 10/30/68 | 1:00 am | 16.0 | 1441 | | | | 715 |
| | 2:00 | 17.0 | 1447 | | | | 725 |
| | 3:00 | 18.0 | 1461 | | | | 745 |
| | 4:00 | 19.0 | 1482 | | | | 755 |
| | 5:00 | 20.0 | 1491 | | | | 775 |
| | 6:00 | 21.0 | 1508 | | | | 790 |

TABLE II

Page 2

| <u>Date</u> | <u>Time</u> | <u>Δt (Hrs)</u> | <u>Bottom Hole Pressure (psia)</u> | <u>Casing Pressure (psig)</u> | <u>Tubing Pressure (psig)</u> |
|-------------|-------------|--|--|---------------------------------------|---------------------------------------|
| 10/30/68 | 7:00 | 22.0 | 1514 | | 805 |
| | 8:00 | 23.0 | 1529 | 1255 | 825 |
| | 9:00 | 24.0 | 1532 | | 850 |
| | 10:00 | 25.0 | 1543 | | 870 |
| | 11:00 | 26.0 | 1554 | | 890 |
| | 12:00 | 27.0 | 1567 | | 900 |
| | 1:00 pm | 28.0 | 1579 | | 915 |
| | 2:00 | 29.0 | 1582 | | 930 |
| | 3:00 | 30.0 | 1599 | | 945 |
| | 4:00 | 31.0 | 1602 | | 955 |
| | 5:00 | 32.0 | 1614 | | 965 |
| | 6:00 | 33.0 | 1625 | | 975 |
| | 7:00 | 34.0 | | | 985 |
| | 8:00 | 35.0 | 1637 | | 995 |
| | 9:00 | 36.0 | 1649 | | 1010 |
| | 10:00 | 37.0 | 1655 | | 1020 |
| | 11:00 | 38.0 | 1667 | | 1030 |
| | 12:00 | 39.0 | 1672 | | 1040 |
| 10/31/68 | 1:00 am | 40.0 | 1678 | | 1055 |
| | 2:00 | 41.0 | 1684 | | 1065 |
| | 3:00 | 42.0 | 1696 | | 1080 |
| | 4:00 | 43.0 | 1702 | | 1090 |
| | 5:00 | 44.0 | 1707 | | 1100 |
| | 6:00 | 45.0 | 1719 | | 1115 |
| | 7:00 | 46.0 | | | 1125 |
| | 8:00 | 47.0 | 1725 | 1265 | 1135 |
| | 9:00 | 48.0 | 1737 | | 1145 |
| | 10:00 | 49.0 | 1743 | | |
| | 12:00 | 51.0 | 1749 | | |
| | 1:00 pm | 52.0 | 1755 | | |
| | 2:00 | 53.0 | 1766 | | |
| | 3:00 | 54.0 | 1772 | | |
| | 5:00 | 56.0 | 1778 | | |
| | 6:00 | 57.0 | 1787 | | |
| | 7:00 | 58.0 | 1789 | | |
| | 8:00 | 59.0 | 1795 | | |
| | 9:00 | 60.0 | 1798 | | |
| | 10:00 | 61.0 | 1807 | | |
| | 11:00 | 62.0 | 1813 | | |
| | 12:00 | 63.0 | 1816 | | |

TABLE II

| <u>Date</u> | <u>Time</u> | <u>Δt (Hrs)</u> | <u>Bottom Hole Pressure (psia)</u> | <u>Casing Pressure (psig)</u> | <u>Tubing Pressure (psig)</u> |
|-------------|-------------|--|--|---------------------------------------|---------------------------------------|
| 11/1/68 | 1:00 am | 64.0 | 1819 | | |
| | 2:00 | 65.0 | 1825 | | |
| | 3:00 | 66.0 | 1834 | | |
| | 4:00 | 67.0 | 1836 | | |
| | 6:00 | 69.0 | 1842 | | |
| | 7:00 | 70.0 | 1854 | | |
| | 8:00 | 71.0 | 1857 | 1275 | |
| | 9:00 | 72.0 | 1860 | | |
| | 10:00 | 73.0 | 1865 | | 1435 |
| | 11:00 | 74.0 | | | 1445 |
| | 12:00 | 75.0 | 1871 | | 1455 |
| | 1:00 pm | 76.0 | | | 1465 |
| | 2:00 | 77.0 | 1883 | | 1475 |
| | 3:00 | 78.0 | | | 1490 |
| | 4:00 | 79.0 | 1889 | | 1500 |
| | 5:00 | 80.0 | 1895 | | 1505 |
| | 6:00 | 81.0 | 1904 | | 1510 |
| | 7:00 | 82.0 | 1907 | | 1520 |
| | 8:00 | 83.0 | 1930 | | 1525 |
| | 9:00 | 84.0 | 1936 | | 1530 |
| | 10:00 | 85.0 | 1953 | | 1540 |
| | 11:00 | 86.0 | 1959 | | 1550 |
| | 12:00 | 87.0 | 1977 | | 1560 |
| 11/2/68 | 1:00 am | 88.0 | 1983 | | 1570 |
| | 2:00 | 89.0 | 1995 | | 1575 |
| | 3:00 | 90.0 | 2000 | | 1580 |
| | 4:00 | 91.0 | | | 1585 |
| | 5:00 | 92.0 | 2006 | | 1590 |
| | 6:00 | 93.0 | 2012 | | 1595 |
| | 7:00 | 94.0 | 2024 | | 1600 |
| | 8:00 | 95.0 | | | 1605 |
| | 9:00 | 96.0 | | 1290 | 1610 |
| | 10:00 | 97.0 | 2029 | | 1620 |
| | 11:00 | 98.0 | 2041 | | 1625 |
| | 12:00 | 99.0 | 2047 | | 1630 |
| | 1:00 pm | 100.0 | | | 1635 |
| | 2:00 | 101.0 | 2053 | | 1640 |
| | 3:00 | 102.0 | | | 1645 |
| | 4:00 | 103.0 | 2059 | | 1645 |
| | 5:00 | 104.0 | | | 1645 |

TABLE II

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| Date | Time | Δt (Hrs) | Bottom Hole Pressure (psia) | Casing Pressure (psig) | Tubing Pressure (psig) |
|----------|---------|---------------------|--------------------------------------|------------------------------|------------------------------|
| 11/02/68 | 6:00 | 105.0 | 2071 | | 1645 |
| | 7:00 | 106.0 | | | 1645 |
| | 8:00 | 107.0 | 2077 | | 1645 |
| | 9:00 | 108.0 | | | 1645 |
| | 10:00 | 109.0 | 2080 | | 1645 |
| | 11:00 | 110.0 | 2085 | | 1645 |
| | 12:00 | 111.0 | 2091 | | 1650 |
| 11/3/68 | 1:00 am | 112.0 | 2094 | | 1655 |
| | 2:00 | 113.0 | | | 1655 |
| | 3:00 | 114.0 | | | 1660 |
| | 4:00 | 115.0 | 2103 | | 1665 |
| | 5:00 | 116.0 | 2106 | | 1665 |
| | 6:00 | 117.0 | | | 1670 |
| | 7:00 | 118.0 | 2111 | | 1670 |
| | 8:00 | 119.0 | 2117 | | 1675 |
| | 9:00 | 120.0 | | 1310 | 1675 |
| | 10:00 | 121.0 | | | 1685 |
| | 11:00 | 122.0 | 2123 | | |
| | 12:00 | 123.0 | 2129 | | |
| | 1:00 pm | 124.0 | 2135 | | |
| | 2:00 | 125.0 | 2138 | | |
| | 3:00 | 126.0 | 2141 | | |
| | 4:00 | 127.0 | | | 1710 |
| | 7:00 | 130.0 | 2147 | | |
| | 8:00 | 131.0 | 2153 | | |
| | 10:00 | 133.0 | | | 1715 |
| | 11:00 | 134.0 | 2164 | | |
| 11/4/68 | 1:00 am | 136.0 | 2170 | | |
| | 3:00 | 138.0 | 2173 | | |
| | 4:00 | 139.0 | 2182 | | 1725 |
| | 6:00 | 141.0 | 2188 | | |
| | 9:00 | 144.0 | 2193 | 1335 | |
| | 10:00 | 145.0 | | | 1735 |
| | 11:00 | 146.0 | 2196 | | |
| | 1:00 pm | 148.0 | 2202 | | |
| | 2:00 | 149.0 | 2205 | | |
| | 3:00 | 150.0 | 2211 | | |
| | 4:00 | 151.0 | | | 1750 |
| | 6:00 | 153.0 | 2217 | | |
| | 9:00 | 156.0 | 2229 | | |
| | 10:00 | 157.0 | 2232 | | 1755 |
| | 12:00 | 159.0 | 2235 | | |

TABLE II

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| <u>Date</u> | <u>Time</u> | <u>Δt (Hrs)</u> | <u>Bottom Hole Pressure (psia)</u> | <u>Casing Pressure (psig)</u> | <u>Tubing Pressure (psig)</u> |
|-------------|-------------|--|--|---------------------------------------|---------------------------------------|
| 11/5/68 | 1:00 am | 160.0 | 2238 | | |
| | 2:00 | 161.0 | 2240 | | |
| | 4:00 | 163.0 | | | 1770 |
| | 8:00 | 167.0 | 2243 | | |
| | 9:00 | 168.0 | | 1360 | |
| | 10:00 | 169.0 | 2246 | | 1790 |
| | 11:00 | 170.0 | 2252 | | |
| | 12:00 | 171.0 | 2258 | | |
| | 3:00 pm | 174.0 | 2261 | | |
| | 4:00 | 175.0 | 2264 | | 1800 |
| | 6:00 | 177.0 | 2266 | | |
| | 7:00 | 178.0 | 2269 | | |
| | 8:00 | 179.0 | 2272 | | |
| | 9:00 | 180.0 | 2275 | | |
| | 10:00 | 181.0 | 2278 | | 1800 |
| | 11:00 | 182.0 | 2281 | | |
| 11/6/68 | 2:00 am | 185.0 | 2284 | | |
| | 3:00 | 186.0 | 2287 | | |
| | 4:00 | 187.0 | | | 1815 |
| | 8:00 | 191.0 | 2393 | 1380 | |
| | 10:00 | 193.0 | | | 1825 |
| | 2:00 pm | 197.0 | 2305 | | |
| | 4:00 | 199.0 | | | 1830 |
| | 6:00 | 201.0 | 2311 | | |
| | 9:00 | 204.0 | 2317 | | |
| | 10:00 | 205.0 | 2320 | | 1825 |
| 11/7/68 | 1:00 am | 208.0 | 2322 | | |
| | 3:00 | 210.0 | 2325 | | |
| | 4:00 | 211.0 | 2328 | | 1835 |
| | 9:00 | 216.0 | 2331 | 1390 | |
| | 10:00 | 217.0 | 2334 | | 1855 |
| | 1:00 pm | 220.0 | 2337 | | |
| | 2:00 | 221.0 | 2340 | | |
| | 10:00 | 229.0 | 2351 | | 1860 |

TABLE II

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| <u>Date</u> | <u>Time</u> | <u>Δt (Hrs)</u> | <u>Bottom Hole Pressure (psia)</u> | <u>Casing Pressure (psig)</u> | <u>Tubing Pressure (psig)</u> |
|-------------|-------------|--|--|---------------------------------------|---------------------------------------|
| 11/8/68 | 3:00 am | 234.0 | 2354 | | |
| | 4:00 | 235.0 | | | 1860 |
| | 6:00 | 237.0 | 2357 | | |
| | 9:00 | 240.0 | | 1420 | |
| | 10:00 | 241.0 | | | 1870 |
| | 12:00 | 243.0 | 2360 | | |
| | 1:00 pm | 244.0 | 2363 | | |
| | 2:00 | 245.0 | 2366 | | |
| | 3:00 | 246.0 | 2369 | | |
| | 4:00 | 247.0 | | | 1880 |
| | 7:00 | 250.0 | 2372 | | |
| | 9:00 | 252.0 | 2375 | | |
| | 10:00 | 253.0 | | | 1880 |
| 11/9/68 | 4:00 am | 259.0 | | | 1890 |
| | 8:00 | 263.0 | | 1490 | |
| | 9:00 | 264.0 | 2381 | | |
| | 10:00 | 265.0 | 2384 | | 1895 |
| | 11:00 | 266.0 | 2387 | | |
| | 4:00 pm | 271.0 | | | 1900 |
| | 10:00 | 277.0 | | | 1895 |
| | 11:00 | 278.0 | 2387 | | |
| 11/10/68 | 4:00 am | 283.0 | | | 1895 |
| | 9:00 | 288.0 | | 1555 | |
| | 10:00 | 289.0 | | | 1895 |
| | 11:00 | 290.0 | 2381 | | |
| | 12:00 | 291.0 | 2375 | | |
| | 2:00 pm | 293.0 | 2363 | | |
| | 3:00 | 294.0 | 2357 | | |
| | 4:00 | 295.0 | 2351 | | 1875 |
| | 5:00 | 296.0 | 2340 | | |
| | 7:00 | 298.0 | 2334 | | |
| | 9:00 | 300.0 | 2328 | | |
| | 10:00 | 301.0 | | | 1850 |

TABLE II

| <u>Date</u> | <u>Time</u> | <u>Δt (Hrs)</u> | <u>Bottom Hole Pressure (psia)</u> | <u>Casing Pressure (psig)</u> | <u>Tubing Pressure (psig)</u> |
|-------------|-------------|--|--|---------------------------------------|---------------------------------------|
| 11/11/68 | 2:00 am | 305.0 | 2331 | | |
| | 4:00 | 307.0 | 2334 | | 1855 |
| | 7:00 | 310.0 | 2337 | | |
| | 8:00 | 311.0 | 2340 | | |
| | 9:00 | 312.0 | | 1710 | |
| | 10:00 | 313.0 | | | 1875 |
| | 12:00 | 315.0 | 2351 | | |
| | 3:00 pm | 318.0 | 2357 | | |
| | 4:00 | 319.0 | 2357 | | 1885 |
| | 7:00 | 322.0 | 2360 | | |
| | 8:00 | 323.0 | 2366 | | |
| | 9:00 | 324.0 | 2368 | | |
| | 10:00 | 325.0 | 2371 | | 1885 |
| | 11:00 | 326.0 | 2374 | | |
| 11/12/68 | 3:00 am | 330.0 | 2381 | | |
| | 4:00 | 331.0 | | | 1895 |
| | 5:00 | 332.0 | 2387 | | |
| | 8:00 | 335.0 | 2396 | | |
| | 9:00 | 336.0 | 2398 | 1865 | 1915 |
| | 3:00 pm | 342.0 | 2404 | | |
| | 4:00 | 343.0 | | | 1925 |
| | 6:00 | 345.0 | 2410 | | |
| | 7:00 | 346.0 | 2413 | | |
| | 9:00 | 348.0 | 2416 | | |
| | 10:00 | 349.0 | | | 1925 |
| | 11:00 | 350.0 | 2422 | | |
| 11/13/68 | 4:00 am | 355.0 | | | 1925 |
| | 9:00 | 360.0 | 2428 | 1900 | 1930 |
| | 10:00 | 361.0 | 2433 | | |
| | 3:00 pm | 366.0 | 2439 | | |
| | 4:00 | 367.0 | 2445 | | 1940 |
| | 10:00 | 373.0 | | | 1940 |

TABLE II

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| <u>Date</u> | <u>Time</u> | <u>Δt (Hrs)</u> | <u>Bottom Hole Pressure (psia)</u> | <u>Casing Pressure (psig)</u> | <u>Tubing Pressure (psig)</u> |
|-------------|-------------|--|--|---------------------------------------|---------------------------------------|
| 11/14/68 | 1:00 am | 376.0 | 2448 | | |
| | 2:00 | 377.0 | 2454 | | |
| | 3:00 | 378.0 | 2457 | | |
| | 4:00 | 379.0 | | | 1945 |
| | 5:00 | 380.0 | 2460 | | |
| | 7:00 | 382.0 | 2463 | | |
| | 9:00 | 384.0 | 2466 | 1920 | 1940 |
| | 10:00 | 385.0 | 2469 | 1920 | 1940 |

End Bottom Hole Pressure Build-up at 10:00 AM 11/14/68

Attempted to pull Ball Bros. Pressure Sentry up hole in order to get gradient stops - line immediately froze in stuffing box - Had to blow well down to retrieve Sentry - Blew well down to 60 psi at surface tubing pressure. Recovered 1.5 Bbls liquid. Estimate 75% of liquid to be condensate.

NOTES: At Δt of 360 hrs pipe rams on BOP leaking very slightly - Estimate 0.5 MCF/D leaked slightly throughout remainder of build-up.

Temperature correction made from Ball Bros. curve dated 11/18/68.
Curve made on instrument used in test immediately after build up test was terminated.

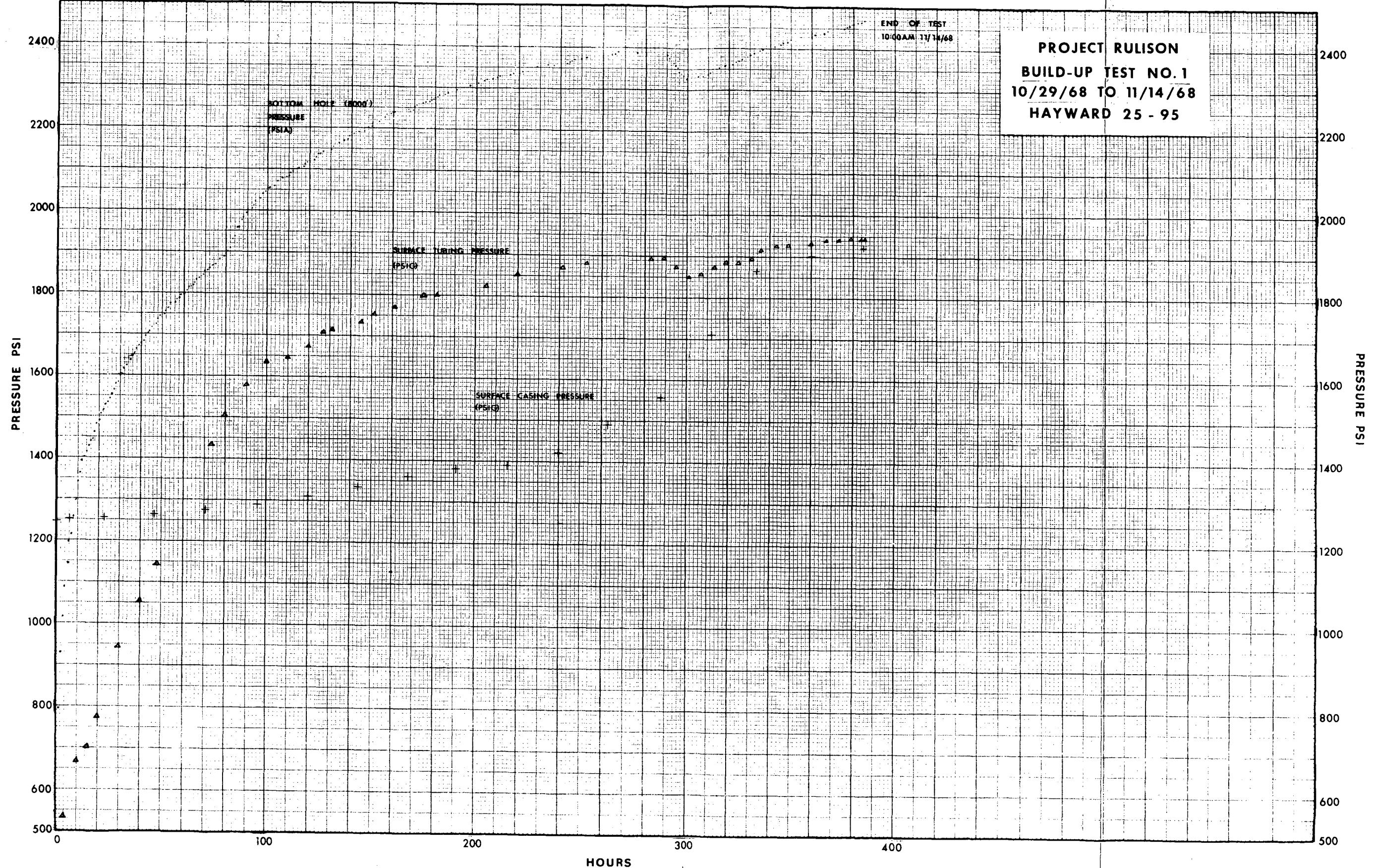


FIGURE 5
II - 9

TABLE III

Pressure Drawdown Data
Flow Test No. 2

Hayward 25-95 (R-EX)
Rulison Field
Mesa Verde Formation
Interval Tested 8148-8172
10/23/68 to 10/29/68

| <u>Date</u> | <u>Time</u> | <u>ΔT</u> <u>(Hrs)</u> | <u>Bottom</u> | | | <u>Flow Rate</u> <u>(mcf/d)</u> | <u>Cum. Liquid Production</u> <u>(Bbls)</u> |
|-------------|-------------|--|---|---|---|--|--|
| | | | <u>Hole Pressure</u> <u>(psig)</u> | <u>Casing Pressure</u> <u>(psig)</u> | <u>Tubing Pressure</u> <u>(psig)</u> | | |
| 12/12/68 | 1:00 pm | 0 | 2358 | 635 | 1880 | 0 | 0 |
| | 2:00 | 1.0 | 2335 | | 1865 | 34.0 | |
| | 2:45 | 1.75 | 2322 | | 1860 | 34.4 | |
| | 3:30 | 2.5 | 2317 | | 1850 | 34.4 | |
| | 4:30 | 3.5 | 2306 | | 1840 | 42.4 | |
| | 5:00 | 4.0 | 2302 | | 1835 | 34.1 | |
| | 6:00 | 5.0 | 2294 | | 1830 | 34.1 | |
| | 7:00 | 6.0 | 2294 | | 1820 | 34.3 | |
| | 8:00 | 7.0 | 2282 | | 1815 | 34.4 | |
| | 9:00 | 8.0 | 2282 | | 1810 | 34.4 | |
| | 10:00 | 9.0 | 2270 | | 1805 | 34.4 | |
| | 11:00 | 10.0 | 2259 | | 1800 | 34.4 | |
| | 12:00 | 11.0 | 2259 | | 1800 | 34.5 | |
| 12/13/68 | 1:00 am | 12.0 | 2253 | | 1800 | 34.2 | |
| | 2:00 | 13.0 | 2253 | | 1800 | 34.4 | |
| | 3:00 | 14.0 | 2247 | | 1795 | 34.1 | |
| | 4:00 | 15.0 | 2247 | | 1795 | 34.1 | |
| | 5:00 | 16.0 | 2229 | | 1790 | 33.9 | |
| | 6:00 | 17.0 | 2235 | | 1785 | 33.9 | |
| | 7:00 | 18.0 | 2229 | | 1785 | 33.9 | |
| | 8:00 | 19.0 | 2229 | | 1785 | 33.5 | |
| | 9:00 | 20.0 | 2229 | | 1790 | 33.5 | |
| | 10:00 | 21.0 | 2226 | | 1795 | 34.6 | |
| | 11:00 | 22.0 | 2223 | | 1800 | 34.2 | |
| | 12:00 | 23.0 | 2223 | | 1805 | 33.4 | |
| | 1:00 pm | 24.0 | 2223 | 645 | 1805 | 32.8 | 0.1 |
| | 2:00 | 25.0 | 2223 | | 1805 | 32.8 | |

TABLE III

Page 2

| Date | Time | ΔT (Hrs) | Bottom | | | Flow Rate (mcf/d) | Cum. Liquid Production (Bbls) |
|----------|---------|---------------------|----------------------------|------------------------------|------------------------------|-------------------------|--|
| | | | Hole Pressure (psig) | Casing Pressure (psig) | Tubing Pressure (psig) | | |
| 12/13/68 | 3:00 | 26.0 | 2206 | | 1800 | 32.8 | |
| | 4:00 | 27.0 | 2206 | | 1790 | 32.9 | |
| | 5:00 | 28.0 | 2206 | | 1775 | 32.8 | |
| | 6:00 | 29.0 | 2200 | | 1770 | 32.7 | |
| | 7:00 | 30.0 | 2200 | | 1770 | 32.9 | |
| | 8:00 | 31.0 | 2200 | | 1765 | 32.9 | |
| | 9:00 | 32.0 | 2200 | | 1765 | 32.9 | |
| | 10:00 | 33.0 | 2200 | | 1765 | 32.8 | |
| | 11:00 | 34.0 | 2194 | | 1760 | 32.8 | |
| | 12:00 | 35.0 | 2194 | | 1760 | 32.8 | |
| 12/14/68 | 1:00 am | 36.0 | 2182 | | 1755 | 32.7 | |
| | 2:00 | 37.0 | 2182 | | 1755 | 32.7 | |
| | 3:00 | 38.0 | 2182 | | 1755 | 32.7 | |
| | 4:00 | 39.0 | 2182 | | 1755 | 32.7 | |
| | 5:00 | 40.0 | 2182 | | 1755 | 32.8 | |
| | 6:00 | 41.0 | 2182 | | 1755 | 32.8 | |
| | 7:00 | 42.0 | 2182 | | 1750 | 32.8 | |
| | 8:00 | 43.0 | 2179 | | 1750 | 32.8 | |
| | 9:00 | 44.0 | 2179 | | 1750 | 32.7 | |
| | 10:00 | 45.0 | 2179 | | 1755 | 32.6 | |
| | 11:00 | 46.0 | 2179 | 665 | 1770 | 32.7 | 0.1 |
| | 12:00 | 47.0 | 2179 | | 1770 | 32.9 | |
| | 1:00 pm | 48.0 | 2176 | | 1780 | 32.7 | |
| | 2:00 | 49.0 | 2173 | | 1780 | 33.3 | |
| | 3:00 | 50.0 | 2171 | | 1775 | 33.0 | |
| | 4:00 | 51.0 | 2171 | | 1760 | 32.8 | |
| | 5:00 | 52.0 | 2171 | | 1750 | 33.0 | |
| | 6:00 | 53.0 | 2171 | | 1740 | 32.8 | |
| | 7:00 | 54.0 | 2171 | | 1740 | 32.6 | |
| | 8:00 | 55.0 | 2159 | | 1740 | 32.7 | |
| | 9:00 | 56.0 | 2159 | | 1740 | 32.7 | |
| | 10:00 | 57.0 | 2159 | | 1740 | 32.7 | |
| | 11:00 | 58.0 | 2159 | | 1740 | 32.6 | |
| | 12:00 | 59.0 | 2159 | | 1735 | 32.6 | |
| 12/15/68 | 1:00 am | 60.0 | 2153 | | 1735 | 32.7 | |
| | 2:00 | 61.0 | 2136 | | 1735 | 32.6 | |
| | 3:00 | 62.0 | 2142 | | 1735 | 32.6 | |
| | 4:00 | 63.0 | 2142 | | 1730 | 32.6 | |
| | 5:00 | 64.0 | 2142 | | 1730 | 32.2 | |
| | 6:00 | 65.0 | 2142 | | 1730 | 32.2 | |

TABLE III

Page 3

| Date | Time | ΔT (Hrs) | Bottom Hole Pressure (psig) | Casing Pressure (psig) | Tubing Pressure (psig) | Flow Rate (mcf/d) | Cum. Liquid Production (Bbls) |
|----------|---------|---------------------|--------------------------------------|------------------------------|------------------------------|-------------------------|--|
| 12/15/68 | 7:00 | 66.0 | 2139 | | 1730 | 32.6 | |
| | 8:00 | 67.0 | 2139 | | 1730 | 32.5 | |
| | 9:00 | 68.0 | 2139 | | 1735 | 32.5 | |
| | 10:00 | 69.0 | 2130 | 675 | 1735 | 32.4 | 0.1 |
| | 11:00 | 70.0 | 2130 | | 1735 | 32.4 | |
| | 12:00 | 71.0 | 2130 | | 1735 | 32.3 | |
| | 1:00 pm | 72.0 | 2130 | | 1740 | 32.6 | |
| | 2:00 | 73.0 | 2130 | | 1740 | 32.5 | |
| | 3:00 | 74.0 | 2124 | | 1740 | 32.4 | |
| | 4:00 | 75.0 | 2121 | | 1730 | 32.1 | |
| | 5:00 | 76.0 | 2118 | | 1720 | 32.3 | |
| | 6:00 | 77.0 | 2118 | | 1715 | 32.4 | |
| | 7:00 | 78.0 | 2118 | | 1715 | 32.2 | |
| | 8:00 | 79.0 | 2115 | | 1710 | 32.2 | |
| | 9:00 | 80.0 | 2112 | | 1710 | 32.2 | |
| | 10:00 | 81.0 | 2112 | | 1710 | 32.3 | |
| | 11:00 | 82.0 | 2112 | | 1705 | 32.3 | |
| | 12:00 | 83.0 | 2112 | | 1705 | 32.2 | |
| 12/16/69 | 1:00 am | 84.0 | 2112 | | 1705 | 32.2 | |
| | 2:00 | 85.0 | 2106 | | 1705 | 32.2 | |
| | 3:00 | 86.0 | 2106 | | 1705 | 32.2 | |
| | 4:00 | 87.0 | 2106 | | 1705 | 32.2 | |
| | 5:00 | 88.0 | 2106 | | 1705 | 32.2 | |
| | 6:00 | 89.0 | 2094 | | 1705 | 32.2 | |
| | 7:00 | 90.0 | 2094 | | 1700 | 32.2 | |
| | 8:00 | 91.0 | 2094 | | 1700 | 32.5 | |
| | 9:00 | 92.0 | 2094 | | 1700 | 32.4 | |
| | 10:00 | 93.0 | 2089 | 690 | 1700 | 32.4 | 0.1 |
| | 11:00 | 94.0 | 2089 | | | 32.2 | |
| | 12:00 | 95.0 | 2083 | | | 32.2 | |
| | 1:00 pm | 96.0 | 2083 | | | 32.2 | |
| | 2:00 | 97.0 | 2083 | | | 32.1 | |
| | 3:00 | 98.0 | 2083 | | | 32.2 | |
| | 4:00 | 99.0 | 2077 | | 1685 | 32.2 | |
| | 5:00 | 100.0 | 2071 | | | 32.3 | |
| | 6:00 | 101.0 | 2071 | | | 32.4 | |
| | 7:00 | 102.0 | 2065 | | | 32.1 | |
| | 8:00 | 103.0 | 2065 | | | 32.2 | |
| | 9:00 | 104.0 | 2065 | | | 32.2 | |
| | 10:00 | 105.0 | 2060 | | 1665 | 32.2 | |
| | 11:00 | 106.0 | 2060 | | | 32.2 | |
| | 12:00 | 107.0 | 2060 | | | 32.0 | |

TABLE III

Page 4

| Date | Time | ΔT (Hrs) | Bottom Hole Pressure (psig) | Casing Pressure (psig) | Tubing Pressure (psig) | Flow Rate (mcf/d) | Cum. Liquid Production (Bbls) |
|----------|---------|---------------------|--------------------------------------|------------------------------|------------------------------|-------------------------|--|
| 12/17/68 | 1:00 am | 108.0 | 2060 | | | 31.9 | |
| | 2:00 | 109.0 | 2060 | | | 32.1 | |
| | 3:00 | 110.0 | 2060 | | | 32.1 | |
| | 4:00 | 111.0 | 2060 | | 1650 | 31.8 | |
| | 5:00 | 112.0 | 2051 | | | 31.8 | |
| | 6:00 | 113.0 | 2051 | | | 31.7 | |
| | 7:00 | 114.0 | 2048 | | | 31.8 | |
| | 8:00 | 115.0 | 2048 | | | 31.8 | |
| | 9:00 | 116.0 | 2048 | 700 | | 31.5 | 0.1 |
| | 10:00 | 117.0 | 2048 | | 1640 | 31.5 | |
| | 11:00 | 118.0 | 2048 | | | 31.7 | |
| | 12:00 | 119.0 | 2048 | | | 31.6 | |
| | 1:00 pm | 120.0 | 2048 | | | 31.5 | |
| | 2:00 | 121.0 | 2048 | | | 31.5 | |
| | 3:00 | 122.0 | 2048 | | | 31.5 | |
| | 4:00 | 123.0 | 2048 | | 1630 | 31.5 | |
| | 5:00 | 124.0 | 2048 | | | 31.5 | |
| | 6:00 | 125.0 | 2048 | | | 31.5 | |
| | 7:00 | 126.0 | 2048 | | | 31.6 | |
| | 8:00 | 127.0 | 2048 | | | 31.6 | |
| | 9:00 | 128.0 | 2045 | | | 31.4 | |
| | 10:00 | 129.0 | 2045 | | 1615 | 31.4 | |
| | 11:00 | 130.0 | 2045 | | | 31.4 | |
| | 12:00 | 131.0 | 2045 | | | 31.4 | |
| 12/18/68 | 1:00 am | 132.0 | 2042 | | | 31.4 | |
| | 2:00 | 133.0 | 2042 | | | 31.1 | |
| | 3:00 | 134.0 | 2042 | | | 31.1 | |
| | 4:00 | 135.0 | 2042 | | 1595 | 31.4 | |
| | 5:00 | 136.0 | 2036 | | | 31.4 | |
| | 6:00 | 137.0 | 2036 | | | 31.4 | |
| | 7:00 | 138.0 | 2036 | | | 31.4 | |
| | 8:00 | 139.0 | 2036 | | | 31.4 | |
| | 9:00 | 140.0 | 2036 | | | 31.8 | |
| | 10:00 | 141.0 | 2036 | 710 | 1590 | 31.8 | 0.1 |
| | 11:00 | 142.0 | 2036 | | | 32.8 | |
| | 12:00 | 143.0 | 2036 | | | 32.6 | |
| | 1:00 pm | 144.0 | 2036 | | | 32.9 | |
| | 2:00 | 145.0 | 2036 | | | 32.4 | |
| | 3:00 | 146.0 | 2036 | | | 32.3 | |
| | 4:00 | 147.0 | 2036 | | 1585 | 32.3 | |
| | 5:00 | 148.0 | 2036 | | | 32.5 | |

TABLE III

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| Date | Time | ΔT (Hrs) | Bottom Hole Pressure (psig) | Casing Pressure (psig) | Tubing Pressure (psig) | Flow Rate (mcf/d) | Cum. Liquid Production (Bbls) |
|----------|---------|---------------------|--------------------------------------|------------------------------|------------------------------|-------------------------|--|
| 12/18/68 | 6:00 | 149.0 | 2036 | | | 32.4 | |
| | 7:00 | 150.0 | 2036 | | | 32.6 | |
| | 8:00 | 151.0 | 2033 | | | 32.7 | |
| | 9:00 | 152.0 | 2033 | | | 32.7 | |
| | 10:00 | 153.0 | 2030 | | 1560 | 32.7 | |
| | 11:00 | 154.0 | 2030 | | | 33.1 | |
| | 12:00 | 155.0 | 2030 | | | 32.8 | |
| 12/19/68 | 1:00 am | 156.0 | 2030 | | | 32.1 | |
| | 2:00 | 157.0 | 2030 | | | 32.0 | |
| | 3:00 | 158.0 | 2030 | | | 31.6 | |
| | 4:00 | 159.0 | 2030 | | 1545 | 31.6 | |
| | 5:00 | 160.0 | 2027 | | | 31.7 | |
| | 6:00 | 161.0 | 2027 | | | 31.7 | |
| | 7:00 | 162.0 | 2027 | | | 31.7 | |
| | 8:00 | 163.0 | 2027 | | | 31.7 | |
| | 9:00 | 164.0 | 2027 | | | 32.0 | |
| | 10:00 | 165.0 | 2024 | 725 | 1535 | 32.3 | 0.1 |
| | 11:00 | 166.0 | 2024 | | | 31.9 | |
| | 12:00 | 167.0 | 2024 | | | 31.7 | |
| | 1:00 pm | 168.0 | 2018 | | | 31.6 | |
| | 2:00 | 169.0 | 2018 | | | 31.7 | |
| | 3:00 | 170.0 | 2018 | | | 31.8 | |
| | 4:00 | 171.0 | 2018 | | 1525 | 31.9 | |
| | 5:00 | 172.0 | 2018 | | | 31.9 | |
| | 6:00 | 173.0 | 2018 | | | 31.9 | |
| | 7:00 | 174.0 | 2018 | | | 31.6 | |
| | 8:00 | 175.0 | 2018 | | | 31.7 | |
| | 9:00 | 176.0 | 2018 | | | 31.7 | |
| | 10:00 | 177.0 | 2012 | | 1510 | 31.7 | |
| | 11:00 | 178.0 | 2012 | | | 31.7 | |
| | 12:00 | 179.0 | 2012 | | | 31.7 | |
| 12/20/68 | 1:00 am | 180.0 | 2012 | | | 31.6 | |
| | 2:00 | 181.0 | 2012 | | | 31.7 | |
| | 3:00 | 182.0 | 2012 | | 1500 | 31.4 | |
| | 4:00 | 183.0 | 2012 | | | 31.4 | |
| | 5:00 | 184.0 | 2012 | | | 31.3 | |
| | 6:00 | 185.0 | 2012 | | | 31.3 | |
| | 7:00 | 186.0 | 2012 | | | 31.3 | |
| | 8:00 | 187.0 | 2012 | | | 31.3 | |
| | 9:00 | 188.0 | 2012 | | | 31.3 | |

TABLE III

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| Date | Time | ΔT (Hrs) | Bottom Hole Pressure (psig) | Casing Pressure (psig) | Tubing Pressure (psig) | Flow Rate (mcf/d) | Cum. Liquid Production (Bbls) |
|----------|---------|---------------------|--------------------------------------|------------------------------|------------------------------|-------------------------|--|
| 12/20/68 | 10:00 | 189.0 | 2012 | 740 | 1490 | 31.4 | 0.1 |
| | 11:00 | 190.0 | 2012 | | | 31.2 | |
| | 12:00 | 191.0 | 2012 | | | 30.9 | |
| | 1:00 pm | 192.0 | 2012 | | | 30.9 | |
| | 2:00 | 193.0 | 2012 | | | 31.1 | |
| | 3:00 | 194.0 | 2012 | | | 31.1 | |
| | 4:00 | 195.0 | 2012 | | 1470 | 31.1 | |
| | 5:00 | 196.0 | 2012 | | | 31.1 | |
| | 6:00 | 197.0 | 2012 | | | 30.9 | |
| | 7:00 | 198.0 | 2012 | | | 30.9 | |
| | 8:00 | 199.0 | 2012 | | | 30.9 | |
| | 9:00 | 200.0 | 2007 | | | 30.9 | |
| | 10:00 | 201.0 | 2007 | | 1455 | 30.9 | |
| | 11:00 | 202.0 | 2007 | | | 30.9 | |
| | 12:00 | 203.0 | 2001 | | | 30.9 | |
| 12/21/68 | 1:00 am | 204.0 | 2001 | | | 30.9 | 0.1 |
| | 2:00 | 205.0 | 2001 | | | 30.8 | |
| | 3:00 | 206.0 | 2001 | | | 30.8 | |
| | 4:00 | 207.0 | 2001 | | 1445 | 30.8 | |
| | 5:00 | 208.0 | 2001 | | | 30.8 | |
| | 6:00 | 209.0 | 2001 | | | 30.8 | |
| | 7:00 | 210.0 | 1995 | | | 30.9 | |
| | 8:00 | 211.0 | 1995 | | | 30.9 | |
| | 9:00 | 212.0 | 2001 | | | 30.9 | |
| | 10:00 | 213.0 | 2001 | 750 | 1440 | 30.8 | |
| | 11:00 | 214.0 | 2001 | | | 30.8 | |
| | 12:00 | 215.0 | 2001 | | | 30.7 | |
| | 1:00 pm | 216.0 | 2001 | | | 30.7 | |
| | 2:00 | 217.0 | 2001 | | | 30.8 | |
| | 3:00 | 218.0 | 2001 | | | 30.8 | |
| | 4:00 | 219.0 | 1995 | | 1430 | 30.8 | |
| | 5:00 | 220.0 | 1995 | | | 30.8 | |
| | 6:00 | 221.0 | 1989 | | | 30.8 | |
| | 7:00 | 222.0 | 1995 | | | 30.8 | |
| | 8:00 | 223.0 | 1995 | | | 30.8 | |
| | 9:00 | 224.0 | 1995 | | | 30.8 | |
| | 10:00 | 225.0 | 1995 | | 1415 | 30.8 | |
| | 11:00 | 226.0 | 1995 | | | 30.8 | |
| | 12:00 | 227.0 | 1995 | | | 30.8 | |

TABLE III

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| Date | Time | ΔT (Hrs) | Bottom Hole Pressure (psig) | Casing Pressure (psig) | Tubing Pressure (psig) | Flow Rate (mcf/d) | Cum. Liquid Production (Bbls) |
|----------|---------|---------------------|--------------------------------------|------------------------------|------------------------------|-------------------------|--|
| 12/22/68 | 1:00 am | 228.0 | 1995 | | | 30.8 | |
| | 2:00 | 229.0 | 1995 | | | 30.9 | |
| | 3:00 | 230.0 | 1995 | | | 30.6 | |
| | 4:00 | 231.0 | 1995 | | 1405 | 30.6 | |
| | 5:00 | 232.0 | 1995 | | | 30.6 | |
| | 6:00 | 233.0 | 1989 | | | 30.7 | |
| | 7:00 | 234.0 | 1989 | | | 30.8 | |
| | 8:00 | 235.0 | 1989 | | | 30.9 | |
| | 9:00 | 236.0 | 1989 | | | 30.9 | |
| | 10:00 | 237.0 | 1989 | 760 | 1400 | 30.9 | 0.1 |
| | 11:00 | 238.0 | 1989 | | | 32.3 | |
| | 12:00 | 239.0 | 1989 | | | 32.8 | |
| | 1:00 pm | 240.0 | 1989 | | | 33.0 | |
| | 2:00 | 241.0 | 1989 | | | 32.2 | |
| | 3:00 | 242.0 | 1989 | | | 31.9 | |
| | 4:00 | 243.0 | 1989 | | 1395 | 31.2 | |
| | 5:00 | 244.0 | 1989 | | | 31.1 | |
| | 6:00 | 245.0 | 1989 | | | 30.8 | |
| | 7:00 | 246.0 | 1989 | | | 30.9 | |
| | 8:00 | 247.0 | 1989 | | | 30.7 | |
| | 9:00 | 248.0 | 1989 | | | 30.3 | |
| | 10:00 | 249.0 | 1989 | | 1380 | 30.3 | |
| | 11:00 | 250.0 | 1989 | | | 30.2 | |
| | 12:00 | 251.0 | 1989 | | | 30.2 | |
| 12/23/68 | 1:00 am | 252.0 | 1989 | | | 30.1 | |
| | 2:00 | 253.0 | 1989 | | | 29.8 | |
| | 3:00 | 254.0 | 1989 | | | 29.8 | |
| | 4:00 | 255.0 | 1989 | | 1370 | 29.4 | |
| | 5:00 | 256.0 | 1989 | | | 29.4 | |
| | 6:00 | 257.0 | 1989 | | | 29.1 | |
| | 7:00 | 258.0 | 1989 | | | 29.1 | |
| | 8:00 | 259.0 | 1989 | | | 29.0 | |
| | 9:00 | 260.0 | 1989 | | | 29.0 | |
| | 10:00 | 261.0 | 1989 | 770 | 1365 | 28.9 | 0.1 |
| | 11:00 | 262.0 | 1989 | | | 32.4 | |
| | 12:00 | 263.0 | 1984 | | | 33.0 | |
| | 1:00 pm | 264.0 | 1984 | | | 32.7 | |
| | 2:00 | 265.0 | 1984 | | | 32.7 | |
| | 3:00 | 266.0 | 1984 | | | 32.4 | |
| | 4:00 | 267.0 | 1984 | | 1345 | 32.4 | |

TABLE III

| Date | Time | ΔT (Hrs) | Bottom Hole Pressure (psig) | Casing Pressure (psig) | Tubing Pressure (psig) | Flow Rate (mcf/d) | Cum. Liquid Production (Bbls) |
|----------|---------|---------------------|--------------------------------------|------------------------------|------------------------------|-------------------------|--|
| 12/23/68 | 5:00 | 268.0 | 1984 | | | 32.5 | |
| | 6:00 | 269.0 | 1984 | | | 32.2 | |
| | 7:00 | 270.0 | 1984 | | | 32.2 | |
| | 8:00 | 271.0 | 1984 | | | 32.2 | |
| | 9:00 | 272.0 | 1984 | | | 32.2 | |
| | 10:00 | 273.0 | 1984 | 1330 | | 32.2 | |
| | 11:00 | 274.0 | 1984 | | | 31.9 | |
| | 12:00 | 275.0 | 1984 | | | 32.1 | |
| 12/24/68 | 1:00 am | 276.0 | 1978 | | | 32.1 | |
| | 2:00 | 277.0 | 1972 | | | 32.1 | |
| | 3:00 | 278.0 | 1972 | | | 31.8 | |
| | 4:00 | 279.0 | 1972 | 1315 | | 31.7 | |
| | 5:00 | 280.0 | 1972 | | | 31.3 | |
| | 6:00 | 281.0 | 1972 | | | 31.3 | |
| | 7:00 | 282.0 | 1972 | | | 31.3 | |
| | 8:00 | 283.0 | 1972 | | | 31.2 | |
| | 9:00 | 284.0 | 1972 | | | 31.1 | |
| | 10:00 | 285.0 | 1972 | 780 | 1310 | 31.1 | 0.1 |
| | 11:00 | 286.0 | 1972 | | | 31.2 | |
| | 12:00 | 287.0 | 1972 | | | 32.3 | |
| | 1:00 pm | 288.0 | 1972 | | | 32.6 | |
| | 2:00 | 289.0 | 1966 | | | 32.7 | |
| | 3:00 | 290.0 | 1966 | | | 32.8 | |
| | 4:00 | 291.0 | 1966 | 1290 | | 32.7 | |
| | 5:00 | 292.0 | 1966 | | | 32.7 | |
| | 6:00 | 293.0 | 1966 | | | 32.6 | |
| | 7:00 | 294.0 | 1966 | | | 32.7 | |
| | 8:00 | 295.0 | 1966 | | | 32.8 | |
| | 9:00 | 296.0 | 1966 | | | 33.1 | |
| | 10:00 | 297.0 | 1966 | 1270 | | 33.5 | |
| | 11:00 | 298.0 | 1966 | | | 33.5 | |
| | 12:00 | 299.0 | 1966 | | | 33.5 | |
| 12/25/68 | 1:00 am | 300.0 | 1966 | | | 33.4 | |
| | 2:00 | 301.0 | 1966 | | | 33.4 | |
| | 3:00 | 302.0 | 1951 | | | 33.4 | |
| | 4:00 | 303.0 | 1951 | 1255 | | 33.4 | |
| | 5:00 | 304.0 | 1951 | | | 33.4 | |
| | 6:00 | 305.0 | 1954 | | | 33.4 | |
| | 7:00 | 306.0 | 1954 | | | 33.3 | |
| | 8:00 | 307.0 | 1954 | | | 33.0 | |

TABLE III

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| Date | Time | ΔT (Hrs) | Bottom Hole Pressure (psig) | Casing Pressure (psig) | Tubing Pressure (psig) | Flow Rate (mcf/d) | Cum. Liquid Production (Bbls) |
|----------|---------|---------------------|--------------------------------------|------------------------------|------------------------------|-------------------------|--|
| 12/25/68 | 9:00 | 308.0 | 1954 | | | 32.9 | |
| | 10:00 | 309.0 | 1954 | 790 | 1240 | 32.9 | 0.1 |
| | 11:00 | 310.0 | 1954 | | | 32.8 | |
| | 12:00 | 311.0 | 1954 | | | 32.4 | |
| | 1:00 pm | 312.0 | 1948 | | | 32.4 | |
| | 2:00 | 313.0 | 1948 | | | 32.4 | |
| | 3:00 | 314.0 | 1948 | | | 32.4 | |
| | 4:00 | 315.0 | 1948 | | 1220 | 32.0 | |
| | 5:00 | 316.0 | 1948 | | | 32.0 | |
| | 6:00 | 317.0 | 1954 | | | 32.1 | |
| | 7:00 | 318.0 | 1954 | | | 32.2 | |
| | 8:00 | 319.0 | 1954 | | | 31.8 | |
| | 9:00 | 320.0 | 1954 | | | 31.8 | |
| | 10:00 | 321.0 | 1954 | | 1205 | 31.9 | |
| | 11:00 | 322.0 | 1954 | | | 31.9 | |
| | 12:00 | 323.0 | 1954 | | | 31.9 | |
| 12/26/68 | 1:00 am | 324.0 | 1954 | | | 31.9 | |
| | 2:00 | 325.0 | 1954 | | | 31.8 | |
| | 3:00 | 326.0 | 1954 | | | 31.8 | |
| | 4:00 | 327.0 | 1954 | | 1200 | 31.8 | |
| | 5:00 | 328.0 | 1954 | | | 31.8 | |
| | 6:00 | 329.0 | 1948 | | | 31.9 | |
| | 7:00 | 330.0 | 1942 | | | 31.9 | |
| | 8:00 | 331.0 | 1942 | | | 31.8 | |
| | 9:00 | 332.0 | 1942 | | | 31.9 | |
| | 10:00 | 333.0 | 1942 | 800 | 1190 | 31.9 | 0.1 |
| | 11:00 | 334.0 | 1942 | | | 32.7 | |
| | 12:00 | 335.0 | 1942 | | | 32.7 | |
| | 1:00 pm | 336.0 | 1942 | | | 32.4 | |
| | 2:00 | 337.0 | 1942 | | | 31.8 | |
| | 3:00 | 338.0 | 1942 | | | 31.6 | |
| | 4:00 | 339.0 | 1942 | | 1170 | 31.3 | |
| | 5:00 | 340.0 | 1942 | | | 31.5 | |
| | 6:00 | 341.0 | 1942 | | | 31.5 | |
| | 7:00 | 342.0 | 1942 | | | 31.3 | |
| | 8:00 | 343.0 | 1942 | | | 31.3 | |
| | 9:00 | 344.0 | 1942 | | | 31.2 | |
| | 10:00 | 345.0 | 1942 | | 1160 | 31.2 | |
| | 11:00 | 346.0 | 1942 | | | 31.4 | |
| | 12:00 | 347.0 | 1942 | | | 31.6 | |

TABLE III

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| Date | Time | ΔT (Hrs) | Bottom | | | Flow Rate (mcf/d) | Cum. Liquid Production (Bbls) |
|----------|---------|---------------------|----------------------------|------------------------------|------------------------------|-------------------------|--|
| | | | Hole Pressure (psig) | Casing Pressure (psig) | Tubing Pressure (psig) | | |
| 12/27/68 | 1:00 am | 348.0 | 1942 | | | | 31.6 |
| | 2:00 | 349.0 | 1942 | | | | 31.4 |
| | 3:00 | 350.0 | 1942 | | | | 31.4 |
| | 4:00 | 351.0 | 1942 | | 1150 | | 31.0 |
| | 5:00 | 352.0 | 1942 | | | | 30.9 |
| | 6:00 | 353.0 | 1942 | | | | 30.9 |
| | 7:00 | 354.0 | 1942 | | | | 31.1 |
| | 8:00 | 355.0 | 1942 | | | | 31.1 |
| | 9:00 | 356.0 | 1942 | | | | 31.1 |
| | 10:00 | 357.0 | 1942 | 810 | 1140 | | 31.2 |
| | 11:00 | 358.0 | 1942 | | | | 31.5 |
| | 12:00 | 359.0 | 1942 | | | | 31.7 |
| | 1:00 pm | 360.0 | 1942 | | | | 31.5 |
| | 2:00 | 361.0 | 1942 | | | | 31.2 |
| | 3:00 | 362.0 | 1942 | | | | 31.3 |
| | 4:00 | 363.0 | 1942 | | 1135 | | 31.4 |
| | 5:00 | 364.0 | 1942 | | | | 31.3 |
| | 6:00 | 365.0 | 1942 | | | | 31.4 |
| | 7:00 | 366.0 | 1942 | | | | 31.4 |
| | 8:00 | 367.0 | 1942 | | | | 31.5 |
| | 9:00 | 368.0 | 1942 | | | | 31.4 |
| | 10:00 | 369.0 | 1942 | | 1115 | | 31.4 |
| | 11:00 | 370.0 | 1942 | | | | 31.8 |
| | 12:00 | 371.0 | 1936 | | | | 31.8 |
| 12/28/68 | 1:00 am | 372.0 | 1936 | | | | 32.1 |
| | 2:00 | 373.0 | 1936 | | | | 31.7 |
| | 3:00 | 374.0 | 1936 | | | | 31.3 |
| | 4:00 | 375.0 | 1936 | | 1110 | | 31.0 |
| | 5:00 | 376.0 | 1936 | | | | 30.9 |
| | 6:00 | 377.0 | 1936 | | | | 31.0 |
| | 7:00 | 378.0 | 1936 | | | | 31.0 |
| | 8:00 | 379.0 | 1936 | | | | 31.1 |
| | 9:00 | 380.0 | 1936 | | | | 31.0 |
| | 10:00 | 381.0 | 1936 | 815 | 1100 | | 30.9 |
| | 11:00 | 382.0 | 1936 | | | | 30.9 |
| | 12:00 | 383.0 | 1936 | | | | 31.3 |
| | 1:00 pm | 384.0 | 1936 | | | | 31.2 |
| | 2:00 | 385.0 | 1936 | | | | 31.1 |
| | 3:00 | 386.0 | 1936 | | | | 31.1 |

TABLE III

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| <u>Date</u> | <u>Time</u> | <u>ΔT (Hrs)</u> | <u>Bottom</u> | | | <u>Tubing Pressure (psig)</u> | <u>Flow Rate (mcf/d)</u> | <u>Cum. Liquid Production (Bbls)</u> |
|-------------|-------------|--|-------------------------------------|---------------------------------------|----------|---------------------------------------|----------------------------------|--|
| | | | <u>Hole Pressure (psig)</u> | <u>Casing Pressure (psig)</u> | <u> </u> | | | |
| 12/28/68 | 4:00 | 387.0 | 1936 | | | 1085 | 31.1 | |
| | 5:00 | 388.0 | 1931 | | | | 31.2 | |
| | 6:00 | 389.0 | 1931 | | | | 31.3 | |
| | 7:00 | 390.0 | 1931 | | | | 31.3 | |
| | 8:00 | 391.0 | 1931 | | | | 31.3 | |
| | 9:00 | 392.0 | 1931 | | | | 31.3 | |
| | 10:00 | 393.0 | 1931 | | | | 31.3 | |
| | 11:00 | 394.0 | 1931 | | | | 31.3 | |
| | 12:00 | 395.0 | 1931 | | | | 31.4 | |
| | | | | | | | | |
| 12/29/68 | 1:00 am | 396.0 | 1931 | | | 1060 | 31.1 | |
| | 2:00 | 397.0 | 1925 | | | | 31.1 | |
| | 3:00 | 398.0 | 1925 | | | | 31.1 | |
| | 4:00 | 399.0 | 1925 | | | | 30.7 | |
| | 5:00 | 400.0 | 1925 | | | | 30.7 | |
| | 6:00 | 401.0 | 1925 | | | | 30.7 | |
| | 7:00 | 402.0 | 1925 | | | | 30.7 | |
| | 8:00 | 403.0 | 1925 | | | | 30.6 | |
| | 9:00 | 404.0 | 1925 | | | | 31.0 | |
| | 10:00 | 405.0 | 1925 | 825 | | | 30.9 | |
| | 11:00 | 406.0 | 1925 | | | | 30.9 | |
| | 12:00 | 407.0 | 1919 | | | | 30.9 | |
| | 1:00 pm | 408.0 | 1919 | | | | 31.2 | |
| | 2:00 | 409.0 | 1925 | | | | 32.3 | |
| | 3:00 | 410.0 | 1925 | | | | 32.6 | |
| | 4:00 | 411.0 | 1925 | | | | 32.3 | |
| | 5:00 | 412.0 | 1925 | | | | 32.3 | |
| | 6:00 | 413.0 | 1919 | | | | 32.1 | |
| | 7:00 | 414.0 | 1919 | | | | 32.1 | |
| | 8:00 | 415.0 | 1919 | | | | 32.1 | |
| | 9:00 | 416.0 | 1919 | | | | 33.1 | |
| | 10:00 | 417.0 | 1919 | | | 1010 | 34.5 | |
| | 11:00 | 418.0 | 1919 | | | | 34.4 | |
| | 12:00 | 419.0 | 1919 | | | | 34.1 | |
| | | | | | | | | |
| 12/30/68 | 1:00 am | 420.0 | 1890 | | | 960 | 33.4 | |
| | 2:00 | 421.0 | 1896 | | | | 33.5 | |
| | 3:00 | 422.0 | 1896 | | | | 33.3 | |
| | 4:00 | 423.0 | 1896 | | | | 33.1 | |
| | 5:00 | 424.0 | 1896 | | | | 33.0 | |
| | 6:00 | 425.0 | 1890 | | | | 32.8 | |
| | 7:00 | 426.0 | 1890 | | | | 32.9 | |
| | 8:00 | 427.0 | 1890 | | | | 33.0 | |

TABLE III

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| Date | Time | ΔT (Hrs) | Bottom Hole Pressure (psig) | Casing Pressure (psig) | Tubing Pressure (psig) | Flow Rate (mcf/d) | Cum. Liquid Production (Bbls) |
|----------|---------|---------------------|--------------------------------------|------------------------------|------------------------------|-------------------------|--|
| 12/30/68 | 9:00 | 428.0 | 1890 | | | 33.0 | |
| | 10:00 | 429.0 | 1890 | 830 | 925 | 33.0 | 0.1 |
| | 11:00 | 430.0 | 1890 | | | 33.3 | |
| | 12:00 | 431.0 | 1890 | | | 33.0 | |
| | 1:00 pm | 432.0 | 1890 | | | 32.7 | |
| | 2:00 | 433.0 | 1890 | | | 32.4 | |
| | 3:00 | 434.0 | 1890 | | | 32.1 | |
| | 4:00 | 435.0 | 1890 | | 925 | 32.1 | |
| | 5:00 | 436.0 | 1890 | | | 31.7 | |
| | 6:00 | 437.0 | 1890 | | | 31.4 | |
| | 7:00 | 438.0 | 1890 | | | 31.5 | |
| | 8:00 | 439.0 | 1890 | | | 31.5 | |
| | 9:00 | 440.0 | 1890 | | | 31.4 | |
| | 10:00 | 441.0 | 1890 | | 915 | 31.4 | |
| | 11:00 | 442.0 | 1890 | | | 31.4 | |
| | 12:00 | 443.0 | 1890 | | | 31.3 | |
| 12/31/68 | 1:00 am | 444.0 | 1890 | | | 31.3 | |
| | 2:00 | 445.0 | 1890 | | | 31.4 | |
| | 3:00 | 446.0 | 1890 | | | 31.4 | |
| | 4:00 | 447.0 | 1890 | | 905 | 31.1 | |
| | 5:00 | 448.0 | 1890 | | | 31.1 | |
| | 6:00 | 449.0 | 1890 | | | 31.1 | |
| | 7:00 | 450.0 | 1890 | | | 31.1 | |
| | 8:00 | 451.0 | 1890 | | | 31.1 | |
| | 9:00 | 452.0 | 1890 | | | 31.0 | |
| | 10:00 | 453.0 | 1890 | 840 | 900 | 31.0 | 0.1 |
| | 11:00 | 454.0 | 1890 | | | 31.3 | |
| | 12:00 | 455.0 | 1890 | | | 31.1 | |
| | 1:00 pm | 456.0 | 1890 | | | 31.3 | |
| | 2:00 | 457.0 | 1890 | | | 31.5 | |
| | 3:00 | 458.0 | 1890 | | | 31.1 | |
| | 4:00 | 459.0 | 1890 | | 895 | 32.0 | |
| | 5:00 | 460.0 | 1890 | | | 33.1 | |
| | 6:00 | 461.0 | 1890 | | | 34.5 | |
| | 7:00 | 462.0 | 1890 | | | 38.8 | |
| | 8:00 | 463.0 | 1878 | | | 38.8 | |
| | 9:00 | 464.0 | 1878 | | | 38.8 | |
| | 10:00 | 465.0 | 1878 | | 840 | 38.8 | |
| | 11:00 | 466.0 | 1872 | | | 38.8 | |
| | 12:00 | 467.0 | 1872 | | | 38.8 | |

Instrument Line
Frozen ✓

TABLE III

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| Date | Time | ΔT (Hrs) | Bottom | | | Flow Rate (mcf/d) | Cum. Liquid Production (Bbls) |
|---------|---------|---------------------|----------------------------|------------------------------|------------------------------|-------------------------|--|
| | | | Hole Pressure (psig) | Casing Pressure (psig) | Tubing Pressure (psig) | | |
| 1/01/69 | 1:00 am | 468.0 | 1872 | | | | 38.8 |
| | 2:00 | 469.0 | 1872 | | | | 38.8 |
| | 3:00 | 470.0 | 1854 | | | | 38.8 |
| | 4:00 | 471.0 | 1860 | | 810 | | 38.8 |
| | 5.00 | 472.0 | 1872 | | | | 38.8 |
| | 6:00 | 473.0 | 1872 | | | | 38.8 |
| | 7:00 | 474.0 | 1872 | | | | 38.8 |
| | 8:00 | 475.0 | 1860 | | | | 38.8 |
| | 9:00 | 476.0 | 1854 | | | | 38.8 |
| | 10:00 | 477.0 | 1854 | 845 | 785 | | 38.8 |
| | 11:00 | 478.0 | 1872 | | | | 32.9 |
| | 12:00 | 479.0 | 1872 | | | | 32.7 |
| | 1:00 pm | 480.0 | 1872 | | | | 32.7 |
| | 2:00 | 481.0 | 1872 | | | | 32.7 |
| | 3:00 | 482.0 | 1872 | | | | 32.7 |
| | 4:00 | 483.0 | 1872 | | 780 | | 32.7 |
| | 5:00 | 484.0 | 1872 | | | | 32.8 |
| | 6:00 | 485.0 | 1872 | | | | 33.0 |
| | 7:00 | 486.0 | 1872 | | | | 33.1 |
| | 8:00 | 487.0 | 1872 | | | | 33.1 |
| | 9:00 | 488.0 | 1872 | | | | 33.2 |
| | 10:00 | 489.0 | 1878 | | 790 | | 33.2 |
| | 11:00 | 490.0 | 1872 | | | | 33.2 |
| | 12:00 | 491.0 | 1872 | | | | 33.2 |
| 1/02/69 | 1:00 am | 492.0 | 1872 | | | | 33.2 |
| | 2:00 | 493.0 | 1875 | | | | 33.2 |
| | 3:00 | 494.0 | 1875 | | | | 33.2 |
| | 4:00 | 495.0 | 1875 | | 750 | | 33.3 |
| | 5:00 | 496.0 | 1872 | | | | 33.3 |
| | 6:00 | 497.0 | 1872 | | | | 33.2 |
| | 7:00 | 498.0 | 1872 | | | | 33.2 |
| | 8:00 | 499.0 | 1872 | | | | 33.1 |
| | 9:00 | 500.0 | 1872 | | | | 33.1 |
| | 10:00 | 501.0 | 1872 | 850 | 740 | | 33.1 |
| | 11:00 | 502.0 | 1872 | | | | 33.1 |
| | 12:00 | 503.0 | 1872 | | | | 33.0 |
| | 1:00 pm | 504.0 | 1872 | | | | 33.0 |
| | 2:00 | 505.0 | 1872 | | | | 32.8 |
| | 3:00 | 506.0 | 1872 | | | | 32.7 |
| | 4:00 | 507.0 | 1872 | | 725 | | 32.5 |

TABLE III

| Date | Time | ΔT (Hrs) | Bottom | | | Tubing Pressure (psig) | Flow Rate (mcf/d) | Cum. Liquid Production (Bbls) |
|---------|---------|---------------------|----------------------------|------------------------------|--|------------------------------|-------------------------|--|
| | | | Hole Pressure (psig) | Casing Pressure (psig) | | | | |
| 1/02/69 | 5:00 | 508.0 | 1872 | | | | | 32.6 |
| | 6:00 | 509.0 | 1872 | | | | | 32.6 |
| | 7:00 | 510.0 | 1872 | | | | | 32.7 |
| | 8:00 | 511.0 | 1872 | | | | | 32.8 |
| | 9:00 | 512.0 | 1872 | | | | | 32.8 |
| | 10:00 | 513.0 | 1872 | | | 715 | | 33.0 |
| | 11:00 | 514.0 | 1872 | | | | | 33.1 |
| | 12:00 | 515.0 | 1872 | | | | | 33.1 |
| | | | | | | | | |
| 1/03/69 | 1:00 am | 516.0 | 1872 | | | | | 33.2 |
| | 2:00 | 517.0 | 1872 | | | | | 33.2 |
| | 3:00 | 518.0 | 1872 | | | | | 33.2 |
| | 4:00 | 519.0 | 1872 | | | 690 | | 32.9 |
| | 5:00 | 520.0 | 1872 | | | | | 33.0 |
| | 6:00 | 521.0 | 1872 | | | | | 33.1 |
| | 7:00 | 522.0 | 1872 | | | | | 33.1 |
| | 8:00 | 523.0 | 1854 | | | | | 33.1 |
| | 9:00 | 524.0 | 1854 | | | | | 33.1 |
| | 10:00 | 525.0 | 1854 | 855 | | 675 | | 33.1 |
| | 11:00 | 526.0 | 1854 | | | | | 32.9 |
| | 12:00 | 527.0 | 1872 | | | | | 32.9 |
| | 1:00 pm | 528.0 | 1872 | | | | | 33.1 |
| | 2:00 | 529.0 | 1872 | | | | | 33.1 |
| | 3:00 | 530.0 | 1860 | | | | | 33.1 |
| | 4:00 | 531.0 | 1860 | | | 665 | | 32.7 |
| | 5:00 | 532.0 | 1860 | | | | | 32.5 |
| | 6:00 | 533.0 | 1866 | | | | | 32.8 |
| | 7:00 | 534.0 | 1866 | | | | | 33.3 |
| | 8:00 | 535.0 | 1860 | | | | | 33.5 |
| | 9:00 | 536.0 | 1860 | | | | | 33.6 |
| | 10:00 | 537.0 | 1860 | | | 640 | | 33.7 |
| | 11:00 | 538.0 | 1860 | | | | | 33.7 |
| | 12:00 | 539.0 | 1860 | | | | | 33.7 |
| 1/04/69 | 1:00 am | 540.0 | 1854 | | | | | 33.7 |
| | 2:00 | 541.0 | 1854 | | | | | 33.7 |
| | 3:00 | 542.0 | 1854 | | | | | 33.7 |
| | 4:00 | 543.0 | 1854 | | | 620 | | 33.7 |
| | 5:00 | 544.0 | 1854 | | | | | 33.7 |
| | 6:00 | 545.0 | 1854 | | | | | 33.6 |
| | 7:00 | 546.0 | 1854 | | | | | 33.5 |
| | 8:00 | 547.0 | 1854 | | | | | 33.1 |

TABLE III

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| Date | Time | ΔT (Hrs) | Bottom Hole Pressure (psig) | Casing Pressure (psig) | Tubing Pressure (psig) | Flow Rate (mcf/d) | Cum. Liquid Production (Bbls) |
|---------|---------|---------------------|--------------------------------------|------------------------------|------------------------------|-------------------------|--|
| 1/04/69 | 9:00 | 548.0 | 1854 | | | 32.9 | |
| | 10:00 | 549.0 | 1854 | 860 | 605 | 32.8 | 0.1 |
| | 11:00 | 550.0 | 1854 | | | 33.0 | |
| | 12:00 | 551.0 | 1854 | | | 33.0 | |
| | 1:00 pm | 552.0 | 1854 | | | 33.0 | |
| | 2:00 | 553.0 | 1854 | | | 33.0 | |
| | 3:00 | 554.0 | 1854 | | | 33.0 | |
| | 4:00 | 555.0 | 1854 | | 595 | 33.0 | |
| | 5:00 | 556.0 | 1854 | | | 32.6 | |
| | 6:00 | 557.0 | 1854 | | | 32.6 | |
| | 7:00 | 558.0 | 1854 | | | 33.0 | |
| | 8:00 | 559.0 | 1854 | | | 33.1 | |
| | 9:00 | 560.0 | 1854 | | | 33.2 | |
| | 10:00 | 561.0 | 1854 | | 580 | 33.6 | |
| | 11:00 | 562.0 | 1854 | | | 34.0 | |
| | 12:00 | 563.0 | 1854 | | | 34.0 | |
| 1/05/69 | 1:00 am | 564.0 | 1854 | | | 33.8 | |
| | 2:00 | 565.0 | 1854 | | | 33.8 | |
| | 3:00 | 566.0 | 1854 | | | 33.3 | |
| | 4:00 | 567.0 | 1849 | | 560 | 33.0 | |
| | 5:00 | 568.0 | 1849 | | | 33.0 | |
| | 6:00 | 569.0 | 1849 | | | 33.0 | |
| | 7:00 | 570.0 | 1849 | | | 33.0 | |
| | 8:00 | 571.0 | 1849 | 860 | 545 | 33.3 | 0.1 |
| | 9:00 | 572.0 | 1849 | | | 33.2 | |
| | 10:00 | 573.0 | 1849 | | 545 | 32.8 | |
| | 11:00 | 574.0 | 1849 | | | 32.6 | |
| | 12:00 | 575.0 | 1849 | | | 32.5 | |
| | 1:00 pm | 576.0 | 1849 | | | 32.5 | |
| | 2:00 | 577.0 | 1849 | | | 32.5 | |
| | 3:00 | 578.0 | 1849 | | | 32.5 | |
| | 4:00 | 579.0 | 1849 | | 565 | 32.5 | |
| | 5:00 | 580.0 | 1849 | | | 32.6 | |
| | 6:00 | 581.0 | 1849 | | | 32.7 | |
| | 7:00 | 582.0 | 1849 | | | 32.8 | |
| | 8:00 | 583.0 | 1849 | | | 32.8 | |
| | 9:00 | 584.0 | 1849 | | | 32.8 | |
| | 10:00 | 585.0 | 1849 | | 510 | 32.8 | |
| | 11:00 | 586.0 | 1849 | | | 32.8 | |
| | 12:00 | 587.0 | 1849 | | | 32.8 | |

TABLE III

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| Date | Time | ΔT (Hrs) | Bottom Hole Pressure (psig) | Casing Pressure (psig) | Tubing Pressure (psig) | Flow Rate (mcf/d) | Cum. Liquid Production (Bbls) |
|---------|---------|---------------------|--------------------------------------|------------------------------|------------------------------|-------------------------|--|
| 1/06/69 | 1:00 am | 588.0 | 1843 | | | 32.8 | |
| | 2:00 | 589.0 | 1843 | | | 32.9 | |
| | 3:00 | 590.0 | 1843 | | | 32.9 | |
| | 4:00 | 591.0 | 1843 | | 485 | 32.8 | |
| | 5:00 | 592.0 | 1843 | | | 32.8 | |
| | 6:00 | 593.0 | 1843 | | | 32.8 | |
| | 7:00 | 594.0 | 1843 | | | 32.8 | |
| | 8:00 | 595.0 | 1843 | | | 32.8 | |
| | 9:00 | 596.0 | 1843 | | | 32.8 | |
| | 10:00 | 597.0 | 1843 | 865 | 475 | 32.8 | 0.1 |
| | 11:00 | 598.0 | 1843 | | | 32.6 | |
| | 12:00 | 599.0 | 1843 | | | 32.5 | |
| | 1:00 pm | 600.0 | 1843 | | | 32.7 | |
| | 2:00 | 601.0 | 1843 | | | 32.3 | |
| | 3:00 | 602.0 | 1843 | | | 32.7 | |
| | 4:00 | 603.0 | 1843 | | 475 | 32.5 | |
| | 5:00 | 604.0 | 1843 | | | 32.5 | |
| | 6:00 | 605.0 | 1843 | | | 32.6 | |
| | 7:00 | 606.0 | 1843 | | | 32.6 | |
| | 8:00 | 607.0 | 1843 | | | 32.6 | |
| | 9:00 | 608.0 | 1843 | | | 32.6 | |
| | 10:00 | 609.0 | 1843 | | 470 | 32.6 | |
| | 11:00 | 610.0 | 1843 | | | 32.6 | |
| | 12:00 | 611.0 | 1843 | | | 32.6 | |
| 1/07/69 | 1:00 am | 612.0 | 1843 | | | 32.6 | |
| | 2:00 | 613.0 | 1843 | | | 32.6 | |
| | 3:00 | 614.0 | 1843 | | | 32.6 | |
| | 4:00 | 615.0 | 1843 | | 470 | 32.6 | |
| | 5:00 | 616.0 | 1843 | | | 32.6 | |
| | 6:00 | 617.0 | 1843 | | | 32.6 | |
| | 7:00 | 618.0 | 1843 | | | 33.0 | |
| | 8:00 | 619.0 | 1843 | | | 33.0 | |
| | 9:00 | 620.0 | 1849 | | | 33.0 | |
| | 10:00 | 621.0 | 1849 | 870 | 465 | 32.9 | 0.1 |
| | 11:00 | 622.0 | 1849 | | | 32.8 | |
| | 12:00 | 623.0 | 1849 | | 460 | 33.1 | |
| | 1:00 pm | 624.0 | 1831 | | | 32.7 | |
| | 2:00 | 625.0 | 1831 | | 465 | 32.6 | |
| | 3:00 | 626.0 | 1831 | | | 32.6 | |
| | 4:00 | 627.0 | 1831 | | 485 | 32.7 | |
| | 5:00 | 628.0 | 1849 | | | 33.1 | |

TABLE III

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| Date | Time | ΔT (Hrs) | Bottom | | | Tubing Pressure (psig) | Flow Rate (mcf/d) | Cum. Liquid Production (Bbls) |
|---------|---------|---------------------|----------------------------|------------------------------|--|------------------------------|-------------------------|--|
| | | | Hole Pressure (psig) | Casing Pressure (psig) | | | | |
| 1/07/69 | 6:00 | 629.0 | 1843 | | | 520 | 33.2 | |
| | 7:00 | 630.0 | 1843 | | | | 33.3 | |
| | 8:00 | 631.0 | 1831 | | | 480 | 33.3 | |
| | 9:00 | 632.0 | 1825 | | | | 33.0 | |
| | 10:00 | 633.0 | 1831 | | | 475 | 33.0 | |
| | 11:00 | 634.0 | 1831 | | | | 33.4 | |
| | 12:00 | 635.0 | 1849 | | | 465 | 33.4 | |
| 1/08/69 | 1:00 am | 636.0 | 1831 | | | | 33.4 | |
| | 2:00 | 637.0 | 1808 | | | 440 | 33.0 | |
| | 3:00 | 638.0 | 1808 | | | | 33.1 | |
| | 4:00 | 639.0 | 1808 | | | 420 | 33.1 | |
| | 5:00 | 640.0 | 1808 | | | | 33.0 | |
| | 6:00 | 641.0 | 1808 | | | 445 | 33.0 | |
| | 7:00 | 642.0 | 1825 | | | | 33.1 | |
| | 8:00 | 643.0 | 1819 | | | 480 | 33.1 | |
| | 9:00 | 644.0 | 1808 | | | | 33.2 | |
| | 10:00 | 645.0 | 1808 | 875 | | 425 | 33.2 | 2.4 |
| | 11:00 | 646.0 | 1808 | | | | 33.6 | |
| | 12:00 | 647.0 | 1808 | | | 445 | 33.4 | |
| | 1:00 pm | 648.0 | 1814 | | | | 33.6 | |
| | 2:00 | 649.0 | 1808 | | | 445 | 33.5 | |
| | 3:00 | 650.0 | 1808 | | | | 33.2 | |
| | 4:00 | 651.0 | 1808 | | | 455 | 33.2 | |
| | 5:00 | 652.0 | 1808 | | | | 33.0 | |
| | 6:00 | 653.0 | 1814 | | | 480 | 33.0 | |
| | 7:00 | 654.0 | 1808 | | | | 33.4 | |
| | 8:00 | 655.0 | 1802 | | | 435 | 33.6 | |
| | 9:00 | 656.0 | 1796 | | | | 33.7 | |
| | 10:00 | 657.0 | 1802 | | | 455 | 33.6 | |
| | 11:00 | 658.0 | 1802 | | | | 33.9 | |
| | 12:00 | 659.0 | 1808 | | | 495 | 33.9 | |

TABLE III

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| Date | Time | ΔT (Hrs) | Bottom Hole Pressure (psig) | Casing Pressure (psig) | Tubing Pressure (psig) | Flow Rate (mcf/d) | Cum. Liquid Production (Bbls) |
|---------|---------|---------------------|--------------------------------------|------------------------------|------------------------------|-------------------------|--|
| 1/09/69 | 1:00 am | 660.0 | 1808 | | | 34.1 | |
| | 2:00 | 661.0 | 1796 | | 460 | 34.2 | |
| | 3:00 | 662.0 | 1784 | | | 34.3 | |
| | 4:00 | 663.0 | 1778 | | 445 | 34.3 | |
| | 5:00 | 664.0 | 1784 | | | 34.2 | |
| | 6:00 | 665.0 | 1802 | | 500 | 34.1 | |
| | 7:00 | 666.0 | 1802 | | | 34.3 | |
| | 8:00 | 667.0 | 1784 | | 465 | 34.4 | |
| | 9:00 | 668.0 | 1772 | | | 34.4 | |
| | 10:00 | 669.0 | 1761 | | 430 | 34.3 | |
| | 11:00 | 670.0 | 1772 | 885 | 430 | 33.9 | 12.4 |

Well shut in for BHP Buildup at 11:00 am 1/09/69.

This flow test conducted with Ball Brothers Research Corporation Slim Sentry MK9P, 0 to 3000 psig element, Serial No. SS 107-30- Instrument landed at 8000' RB. Temperature corrections are from Temperature Correction Chart for this BHP Instrument. 205°F Line Calibration date 11/18/68 by Ball Brothers Research.

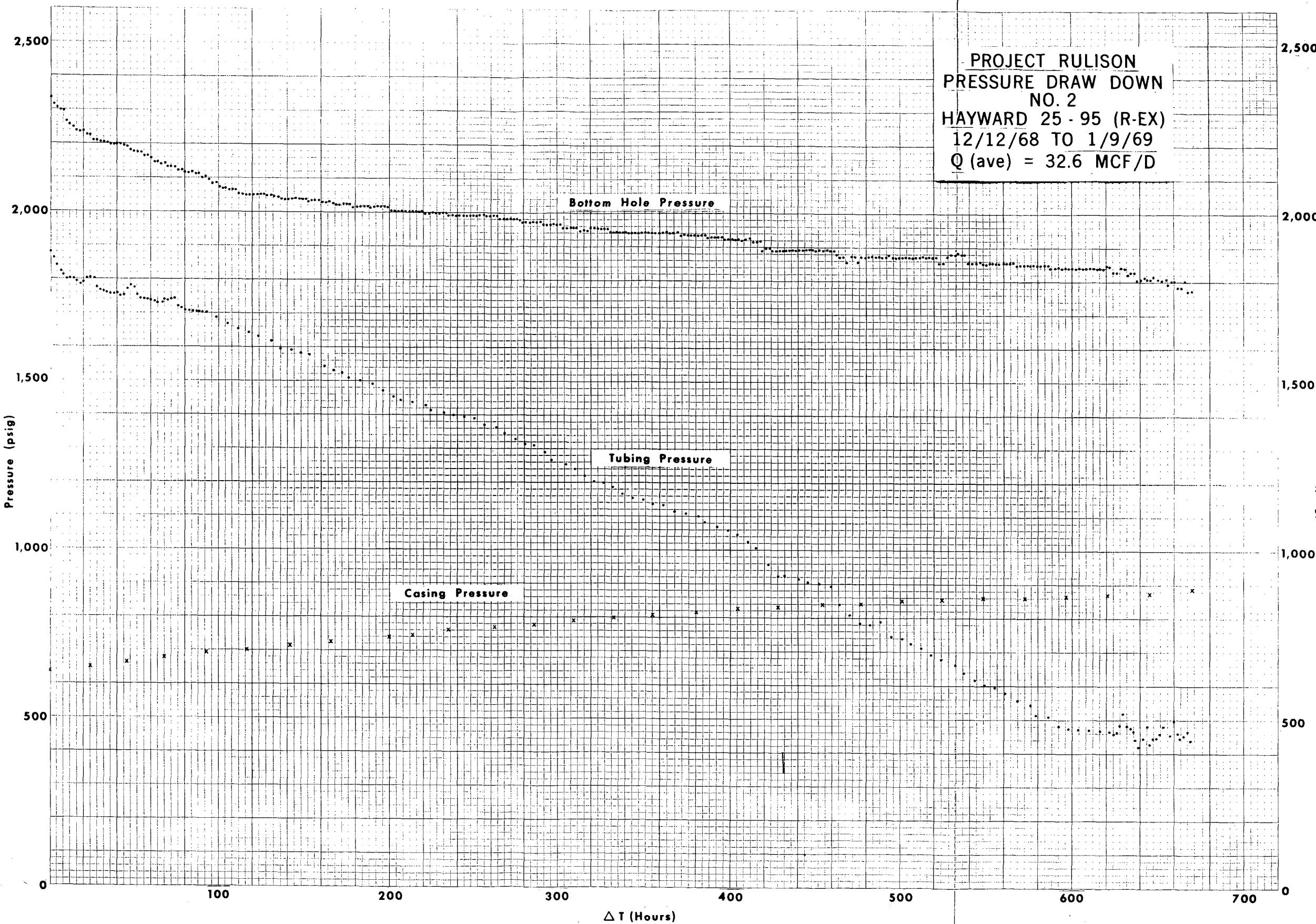


FIGURE 6

TABLE IV

Pressure Buildup Data
Buildup No. 2

Hayward 25-95 (R-EX)
Rulison Field
Mesaverde Formation
Interval Tested 8148-8172
10/23/68 to 10/29/68

| <u>Date</u> | <u>Time</u> | <u>Δt (Hrs)</u> | <u>Bottom Hole Pressure (psig)</u> | <u>Casing Pressure (psig)</u> | <u>Tubing Pressure (psig)</u> |
|-------------|-------------|--|--|---------------------------------------|---------------------------------------|
| 1/09/69 | 11:00 am | 0 | 1772 | 885 | 430 |
| | 11:15 | 0.25 | 1808 | | |
| | 11:30 | 0.50 | 1814 | | |
| | 11:45 | 0.75 | 1814 | | |
| | 12:00 | 1.0 | 1814 | | 630 |
| | 12:30 | 1.5 | 1831 | | |
| | 1:00 pm | 2.0 | 1843 | | 735 |
| | 2:00 | 3.0 | 1849 | | 795 |
| | 3:00 | 4.0 | 1860 | | 830 |
| | 4:00 | 5.0 | 1872 | | 855 |
| | 5:00 | 6.0 | 1872 | | |
| | 6:00 | 7.0 | 1878 | | |
| | 7:00 | 8.0 | 1890 | | |
| | 8:00 | 9.0 | 1896 | | |
| | 9:00 | 10.0 | 1896 | | |
| | 10:00 | 11.0 | 1896 | | 890 |
| | 11:00 | 12.0 | 1896 | | |
| | 12:00 | 13.0 | 1907 | | |
| 1/10/69 | 1:00 am | 14.0 | 1907 | | |
| | 2:00 | 15.0 | 1919 | | |
| | 3:00 | 16.0 | 1919 | | |
| | 4:00 | 17.0 | 1925 | | 950 |
| | 5:00 | 18.0 | 1930 | | |
| | 6:00 | 19.0 | 1936 | | |
| | 7:00 | 20.0 | 1936 | | |
| | 8:00 | 21.0 | 1936 | | |
| | 9:00 | 22.0 | 1942 | | |
| | 10:00 | 23.0 | 1942 | 885 | 1010 |
| | 11:00 | 24.0 | 1948 | | |
| | 12:00 | 25.0 | 1948 | | |

TABLE IV

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| <u>Date</u> | <u>Time</u> | <u>Δt (Hrs)</u> | <u>Bottom Hole Pressure (psig)</u> | <u>Casing Pressure (psig)</u> | <u>Tubing Pressure (psig)</u> |
|-------------|-------------|--|--|---------------------------------------|---------------------------------------|
| 1/10/69 | 1:00 pm | 26.0 | 1954 | | |
| | 2:00 | 27.0 | 1954 | | |
| | 3:00 | 28.0 | 1954 | | |
| | 4:00 | 29.0 | 1966 | | 1060 |
| | 5:00 | 30.0 | 1966 | | |
| | 6:00 | 31.0 | 1966 | | |
| | 7:00 | 32.0 | 1972 | | |
| | 8:00 | 33.0 | 1972 | | |
| | 9:00 | 34.0 | 1978 | | |
| | 10:00 | 35.0 | 1983 | | 1105 |
| | 11:00 | 36.0 | 1983 | | |
| | 12:00 | 37.0 | 1989 | | |
| 1/11/69 | 1:00 am | 38.0 | 1989 | | |
| | 2:00 | 39.0 | 1989 | | |
| | 3:00 | 40.0 | 1989 | | |
| | 4:00 | 41.0 | 1989 | | 1150 |
| | 5:00 | 42.0 | 1995 | | |
| | 6:00 | 43.0 | 1995 | | |
| | 7:00 | 44.0 | 2001 | | |
| | 8:00 | 45.0 | 2001 | | |
| | 9:00 | 46.0 | 2001 | | |
| | 10:00 | 47.0 | 2013 | | 1200 |
| | 11:00 | 48.0 | 2013 | | |
| | 12:00 | 49.0 | 2013 | | |
| | 1:00 pm | 50.0 | 2013 | | |
| | 2:00 | 51.0 | 2013 | | |
| | 3:00 | 52.0 | 2018 | | |
| | 4:00 | 53.0 | 2018 | | 1240 |
| | 5:00 | 54.0 | 2024 | | |
| | 6:00 | 55.0 | 2024 | | |
| | 7:00 | 56.0 | 2030 | | |
| | 8:00 | 57.0 | 2030 | | |
| | 9:00 | 58.0 | 2036 | | |
| | 10:00 | 59.0 | 2036 | | 1270 |
| | 11:00 | 60.0 | 2036 | | |
| | 12:00 | 61.0 | 2036 | | |

TABLE IV

Page 3

| <u>Date</u> | <u>Time</u> | <u>Δt (Hrs)</u> | <u>Bottom Hole Pressure (psig)</u> | <u>Casing Pressure (psig)</u> | <u>Tubing Pressure (psig)</u> |
|-------------|-------------|--|--|---------------------------------------|---------------------------------------|
| 1/12/69 | 1:00 am | 62.0 | 2036 | | |
| | 2:00 | 63.0 | 2036 | | |
| | 3:00 | 64.0 | 2036 | | |
| | 4:00 | 65.0 | 2036 | | 1305 |
| | 5:00 | 66.0 | 2042 | | |
| | 6:00 | 67.0 | 2042 | | |
| | 7:00 | 68.0 | 2048 | | |
| | 8:00 | 69.0 | 2048 | | |
| | 9:00 | 70.0 | 2048 | | |
| | 10:00 | 71.0 | 2048 | 895 | 1340 |
| | 11:00 | 72.0 | 2048 | | |
| | 12:00 | 73.0 | 2060 | | |
| | 1:00 pm | 74.0 | 2060 | | |
| | 2:00 | 75.0 | 2060 | | |
| | 3:00 | 76.0 | 2060 | | |
| | 4:00 | 77.0 | 2060 | | 1385 |
| | 5:00 | 78.0 | 2060 | | |
| | 6:00 | 79.0 | 2066 | | |
| | 7:00 | 80.0 | 2066 | | |
| | 8:00 | 81.0 | 2066 | | |
| | 9:00 | 82.0 | 2066 | | |
| | 10:00 | 83.0 | 2071 | | 1405 |
| | 11:00 | 84.0 | 2071 | | |
| | 12:00 | 85.0 | 2071 | | |
| 1/13/69 | 1:00 am | 86.0 | 2077 | | 1425 |
| | 2:00 | 87.0 | 2077 | | |
| | 3:00 | 88.0 | 2077 | | |
| | 4:00 | 89.0 | 2083 | | 1425 |
| | 5:00 | 90.0 | 2083 | | |
| | 6:00 | 91.0 | 2083 | | |
| | 7:00 | 92.0 | 2083 | | |
| | 8:00 | 93.0 | 2083 | | |
| | 9:00 | 94.0 | 2083 | | |
| | 10:00 | 95.0 | 2083 | | 1460 |
| | 11:00 | 96.0 | 2089 | 910 | |
| | 12:00 | 97.0 | 2089 | | |
| | 1:00 pm | 98.0 | 2089 | | |
| | 2:00 | 99.0 | 2089 | | |
| | 3:00 | 100.0 | 2095 | | |
| | 4:00 | 101.0 | 2095 | | 1495 |
| | 5:00 | 102.0 | 2095 | | |
| | 6:00 | 103.0 | 2095 | | |
| | 7:00 | 104.0 | 2095 | | |
| | 8:00 | 105.0 | 2095 | | |

TABLE IV

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| <u>Date</u> | <u>Time</u> | <u>Δt (Hrs)</u> | <u>Bottom Hole Pressure (psig)</u> | <u>Casing Pressure (psig)</u> | <u>Tubing Pressure (psig)</u> |
|-------------|-------------|--|--|---------------------------------------|---------------------------------------|
| 1/13/69 | 9:00 | 106.0 | 2106 | | |
| | 10:00 | 107.0 | 2106 | | 1510 |
| | 11:00 | 108.0 | 2106 | | |
| | 12:00 | 109.0 | 2106 | | |
| 1/14/69 | 1:00 am | 110.0 | 2106 | | |
| | 2:00 | 111.0 | 2106 | | |
| | 3:00 | 112.0 | 2106 | | |
| | 4:00 | 113.0 | 2106 | | 1535 |
| | 5:00 | 114.0 | 2112 | | |
| | 6:00 | 115.0 | 2112 | | |
| | 7:00 | 116.0 | 2112 | | |
| | 8:00 | 117.0 | 2118 | | |
| | 9:00 | 118.0 | 2118 | | |
| | 10:00 | 119.0 | 2118 | 920 | 1555 |
| | 11:00 | 120.0 | 2118 | | |
| | 12:00 | 121.0 | 2118 | | |
| | 1:00 pm | 122.0 | 2118 | | |
| | 2:00 | 123.0 | 2118 | | |
| | 3:00 | 124.0 | 2118 | | |
| | 4:00 | 125.0 | 2118 | | 1580 |
| | 5:00 | 126.0 | 2130 | | |
| | 6:00 | 127.0 | 2130 | | |
| | 7:00 | 128.0 | 2130 | | |
| | 8:00 | 129.0 | 2130 | | |
| | 9:00 | 130.0 | 2130 | | |
| | 10:00 | 131.0 | 2130 | | 1590 |
| | 11:00 | 132.0 | 2130 | | |
| | 12:00 | 133.0 | 2130 | | |
| 1/15/69 | 1:00 am | 134.0 | 2130 | | |
| | 2:00 | 135.0 | 2130 | | |
| | 3:00 | 136.0 | 2130 | | |
| | 4:00 | 137.0 | 2136 | | 1620 |
| | 5:00 | 138.0 | 2136 | | |
| | 6:00 | 139.0 | 2136 | | |
| | 7:00 | 140.0 | 2136 | | |
| | 8:00 | 141.0 | 2136 | 920 | |
| | 9:00 | 142.0 | 2142 | | |
| | 10:00 | 143.0 | 2142 | | 1650 |
| | 11:00 | 144.0 | 2142 | | |
| | 12:00 | 145.0 | 2142 | | |
| | 1:00 pm | 146.0 | 2142 | | |
| | 2:00 | 147.0 | 2142 | | |
| | 3:00 | 148.0 | 2153 | | |
| | 4:00 | 149.0 | 2153 | | 1670 |

TABLE IV

Page 5

| Date | Time | Δt (Hrs) | Bottom Hole Pressure (psig) | Casing Pressure (psig) | Tubing Pressure (psig) |
|---------|---------|---------------------|---|------------------------------|------------------------------|
| 1/15/69 | 5:00 | 150.0 | 2159 | | |
| | 6:00 | 151.0 | 2159 | | |
| | 7:00 | 152.0 | 2159 | | |
| | 8:00 | 153.0 | 2159 | | |
| | 9:00 | 154.0 | 2171 | | |
| | 10:00 | 155.0 | 2171 | | 1680 |
| | 11:00 | 156.0 | 2171 | | |
| | 12:00 | 157.0 | 2177 | | |
| 1/16/69 | 1:00 am | 158.0 | 2177 | | |
| | 2:00 | 159.0 | 2177 | | |
| | 3:00 | 160.0 | 2182 | | |
| | 4:00 | 161.0 | 2182 | | 1715 |
| | 5:00 | 162.0 | 2182 | | |
| | 6:00 | 163.0 | 2188 | | |
| | 7:00 | 164.0 | 2188 | | |
| | 8:00 | 165.0 | 2188 | | |
| | 9:00 | 166.0 | 2194 | | |
| | 10:00 | 167.0 | (No Surface Recording $\Delta t = 168$ to 189 hrs} | 925 | 1730 |
| | 5:00 pm | 174.0 | | | 1745 |
| | 11:00 | 180.0 | | | 1750 |
| 1/17/69 | 5:00 am | 186.0 | { } 2253 2253 2253 2253 2258 2258 2258 2264 2264 2264 2264 2264 2270 2270 2270 | | 1765 |
| | 9:00 | 190.0 | | | |
| | 10:00 | 191.0 | | | |
| | 11:00 | 192.0 | | | 1790 |
| | 12:00 | 193.0 | | | |
| | 1:00 pm | 194.0 | | | |
| | 2:00 | 195.0 | | | |
| | 3:00 | 196.0 | | | |
| | 4:00 | 197.0 | | | |
| | 5:00 | 198.0 | | | 1795 |
| | 6:00 | 199.0 | | | |
| | 7:00 | 200.0 | | | |
| | 8:00 | 201.0 | | | |
| | 9:00 | 202.0 | | | |
| | 10:00 | 203.0 | | | |
| | 11:00 | 204.0 | | | 1795 |
| | 12:00 | 205.0 | | | |

TABLE IV

| Date | Time | Δt (Hrs) | Bottom Hole Pressure (psig) | Casing Pressure (psig) | Tubing Pressure (psig) |
|---------|---------|---------------------|--------------------------------------|------------------------------|------------------------------|
| 1/18/69 | 1:00 am | 206.0 | 2270 | | |
| | 2:00 | 207.0 | 2276 | | |
| | 3:00 | 208.0 | 2276 | | |
| | 4:00 | 209.0 | 2276 | | |
| | 5:00 | 210.0 | 2276 | | 1805 |
| | 6:00 | 211.0 | 2276 | | |
| | 7:00 | 212.0 | 2276 | | |
| | 8:00 | 213.0 | 2276 | | |
| | 9:00 | 214.0 | 2282 | 960 | |
| | 10:00 | 215.0 | 2282 | | |
| | 11:00 | 216.0 | 2282 | | 1820 |
| | 12:00 | 217.0 | 2282 | | |
| | 1:00 pm | 218.0 | 2282 | | |
| | 2:00 | 219.0 | 2282 | | |
| | 3:00 | 220.0 | 2282 | | |
| | 4:00 | 221.0 | 2282 | | |
| | 5:00 | 222.0 | 2282 | | 1830 |
| | 6:00 | 223.0 | 2282 | | |
| | 7:00 | 224.0 | 2282 | | |
| | 8:00 | 225.0 | 2282 | | |
| | 9:00 | 226.0 | 2282 | | |
| | 10:00 | 227.0 | 2282 | | |
| | 11:00 | 228.0 | 2288 | | 1815 |
| | 12:00 | 229.0 | 2288 | | |
| 1/19/69 | 1:00 am | 230.0 | 2288 | | |
| | 2:00 | 231.0 | 2288 | | |
| | 3:00 | 232.0 | 2288 | | |
| | 4:00 | 233.0 | 2294 | | |
| | 5:00 | 234.0 | 2294 | | 1825 |
| | 6:00 | 235.0 | 2294 | | |
| | 7:00 | 236.0 | 2294 | | |
| | 8:00 | 237.0 | 2294 | | |
| | 9:00 | 238.0 | 2294 | | |
| | 10:00 | 239.0 | 2300 | | |
| | 11:00 | 240.0 | 2300 | | 1830 |
| | 12:00 | 241.0 | 2300 | | |
| | 1:00 pm | 242.0 | 2300 | | |
| | 2:00 | 243.0 | 2300 | 948 | 1830 |
| | 3:00 | 244.0 | 2300 | | |
| | 4:00 | 245.0 | 2300 | | |
| | 5:00 | 246.0 | 2300 | | |
| | 7:00 | 248.0 | 2306 | | |
| | 11:00 | 252.0 | | | 1830 |

TABLE IV

| <u>Date</u> | <u>Time</u> | <u>Δt (Hrs)</u> | <u>Bottom Hole Pressure (psig)</u> | <u>Casing Pressure (psig)</u> | <u>Tubing Pressure (psig)</u> |
|-------------|-------------|--|--|---------------------------------------|---------------------------------------|
| 1/20/69 | 3:00 am | 256.0 | 2311 | | |
| | 5:00 | 258.0 | | | 1835 |
| | 11:00 | 264.0 | 3217 | 995 | 1845 |
| | 5:00 pm | 270.0 | | | 1850 |
| | 6:00 | 271.0 | 2323 | | |
| | 11:00 | 276.0 | | | 1845 |
| 1/21/69 | 5:00 am | 282.0 | | | 1850 |
| | 9:00 | 286.0 | 2329 | | |
| | 11:00 | 288.0 | | 960 | 1855 |
| | 5:00 pm | 294.0 | | | 1855 |
| | 11:00 | 300.0 | | | 1850 |
| 1/22/69 | 1:00 am | 302.0 | 2334 | | |
| | 5:00 | 306.0 | | | 1855 |
| | 9:00 | 310.0 | 2340 | | |
| | 11:00 | 312.0 | | 964 | 1860 |
| | 5:00 pm | 318.0 | | | 1860 |
| | 9:00 | 322.0 | 2346 | | 1855 |
| | 11:00 | 324.0 | | | |
| 1/23/69 | 5:00 am | 330.0 | | | 1865 |
| | 10:00 | 335.0 | | 965 | |
| | 11:00 | 336.0 | 2352 | | 1875 |
| | 5:00 pm | 342.0 | | | 1870 |
| | 9:00 | 346.0 | 2358 | | |
| | 11:00 | 348.0 | | | 1870 |
| 1/24/69 | 4:00 am | 353.0 | 2364 | | |
| | 5:00 | 354.0 | | | 1870 |
| | 11:00 | 360.0 | | | 1875 |
| | 1:00 pm | 362.0 | | 970 | |
| | 5:00 | 366.0 | | | 1885 |
| | 11:00 | 372.0 | | | 1880 |
| 1/25/69 | 1:00 am | 374.0 | 2370 | | |
| | 5:00 | 378.0 | | | 1880 |
| | 11:00 | 384.0 | 2376 | 975 | 1885 |
| | 5:00 pm | 390.0 | | | 1890 |
| | 11:00 | 396.0 | | | 1885 |

TABLE IV

Page 8

| <u>Date</u> | <u>Time</u> | <u>Δt (Hrs)</u> | <u>Bottom Hole Pressure (psig)</u> | <u>Casing Pressure (psig)</u> | <u>Tubing Pressure (psig)</u> |
|-------------|-------------|--|--|---------------------------------------|---------------------------------------|
| 1/26/69 | 4:00 am | 401.0 | 2382 | | |
| | 5:00 | 402.0 | | | 1895 |
| | 9:00 | 406.0 | 2388 | | |
| | 11:00 | 408.0 | | | 1890 |
| | 3:00 pm | 412.0 | | 980 | |
| | 5:00 | 414.0 | | | 1900 |
| | 11:00 | 420.0 | | | 1900 |
| 1/27/69 | 3:00 am | 424.0 | 2393 | | |
| | 5:00 | 426.0 | | | 1900 |
| | 11:00 | 432.0 | | | 1910 |
| | 2:00 pm | 435.0 | | 985 | |
| | 5:00 | 438.0 | | | 1910 |
| | 6:00 | 439.0 | 2399 | | |
| | 11:00 | 444.0 | | | 1905 |
| 1/28/69 | 3:00 am | 448.0 | 2405 | | |
| | 5:00 | 450.0 | | | 1910 |
| | 10:00 | 455.0 | 2411 | | |
| | 11:00 | 456.0 | | 985 | 1920 |
| | 5:00 pm | 462.0 | | | 1920 |
| | 11:00 | 468.0 | | | 1920 |
| | | | | | |
| 1/29/69 | 5:00 am | 474.0 | | | 1920 |
| | 11:00 | 480.0 | | 990 | 1925 |
| | 4:00 pm | 485.0 | 2417 | | |
| | 5:00 | 486.0 | | | 1925 |
| | 11:00 | 492.0 | | | 1920 |
| 1/30/69 | 3:00 am | 496.0 | 2422 | | |
| | 5:00 | 498.0 | | | 1920 |
| | 11:00 | 505.0 | | 995 | 1930 |
| | 12:00 | 506.0 | 2428 | | |
| | 5:00 pm | 510.0 | | | 1940 |
| | 7:00 | 512.0 | 2434 | | |
| | 11:00 | 516.0 | | | 1940 |

TABLE IV

Page 9

| <u>Date</u> | <u>Time</u> | <u>Δt (Hrs)</u> | <u>Bottom Hole Pressure (psig)</u> | <u>Casing Pressure (psig)</u> | <u>Tubing Pressure (psig)</u> |
|-------------|-------------|--|--|---------------------------------------|---------------------------------------|
| 1/31/69 | 5:00 am | 522.0 | | | 1935 |
| | 11:00 | 528.0 | | | 1950 |
| | 4:00 pm | 533.0 | | 1000 | |
| | 5:00 | 534.0 | | | 1950 |
| | 11:00 | 540.0 | | | 1950 |
| 2/01/69 | 1:00 am | 542.0 | 2440 | | |
| | 5:00 | 546.0 | | | 1950 |
| | 8:00 | 549.0 | 2446 | | |
| | 11:00 | 552.0 | | 1000 | 1955 |
| | 11:00 pm | 564.0 | 2452 | | |
| 2/02/69 | 5:00 am | 570.0 | | | 1950 |
| | 8:00 | 573.0 | 2458 | | |
| | 6:00 pm | 583.0 | | | 1960 |
| 2/03/69 | 6:00 pm | 607.0 | | | 1970 |
| 2/04/69 | 7:00 am | 620.0 | 2464 | | |
| | 5:00 pm | 630.0 | | 1010 | |
| | 6:00 | 631.0 | | | 1980 |
| | 7:00 | 632.0 | 2469 | | |
| 2/05/69 | 10:00 am | 647.0 | 2475 | | |
| | 4:00 pm | 653.0 | | | 1985 |
| | 6:00 | 655.0 | 2481 | | |
| 2/06/69 | 11:00 am | 672.0 | | 1020 | |
| | 6:00 pm | 679.0 | | | 1985 |
| | 10:00 | 683.0 | 2487 | | |
| 2/07/69 | 6:00 pm | 703.0 | | | 1990 |
| | 8:00 | 705.0 | 2493 | | |
| 2/08/69 | 4:00 am | 713.0 | 2499 | | |
| | 6:00 pm | 727.0 | | | 1995 |
| 2/09/69 | 2:00 am | 735.0 | 2504 | | |
| | 8:00 pm | 753.0 | | | 2005 |
| 2/10/69 | 10:00 am | 767.0 | 2510 | 1035 | |
| | 8:00 pm | 777.0 | | | 2015 |
| 2/11/69 | 3:00 am | 784.0 | 2516 | | |
| | 9:00 pm | 802.0 | | | 2020 |

TABLE IV

Page 10

| <u>Date</u> | <u>Time</u> | <u>Δt (Hrs)</u> | <u>Bottom Hole Pressure (psig)</u> | <u>Casing Pressure (psig)</u> | <u>Tubing Pressure (psig)</u> |
|-------------|-------------|--|--|---------------------------------------|---------------------------------------|
| 2/12/69 | 3:00 am | 808.0 | 2522 | | |
| | 10:00 | 815.0 | | 1040 | |
| | 8:00 pm | 825.0 | 2528 | | |
| 2/13/69 | 1:00 am | 830.0 | | | 2025 |
| | 6:00 pm | 847.0 | 2534 | | |
| | 9:00 | 850.0 | | | 2025 |
| 2/14/69 | 8:00 pm | 873.0 | | | 2030 |
| 2/15/69 | 1:00 am | 878.0 | 2540 | | |
| | 10:00 | 887.0 | | 1050 | |
| | 7:00 pm | 896.0 | | | 2035 |
| | 11:00 | 900.0 | 2546 | | |
| 2/16/69 | 7:00 pm | 920.0 | | | 2040 |
| 2/17/69 | 1:00 am | 926.0 | 2552 | | |
| | 10:00 | 935.0 | | 1060 | |
| | 10:00 pm | 947.0 | | | 2045 |
| 2/18/69 | 1:00 am | 950.0 | 2557 | | |
| | 8:00 pm | 969.0 | | | 2050 |
| 2/19/69 | 6:00 pm | 991.0 | | | 2050 |
| 2/20/69 | 7:00 am | 1004.0 | 2563 | | |
| | 6:00 pm | 1015.0 | | | 2055 |
| | 8:00 | 1017.0 | 2569 | | |
| 2/21/69 | 3:00 pm | 1036.0 | | 1080 | |
| | 6:00 | 1039.0 | | | 2060 |
| 2/22/69 | 1:00 am | 1046.0 | 2575 | | |
| | 7:00 pm | 1064.0 | | | 2065 |
| 2/23/69 | 1:00 pm | 1082.0 | 2581 | | |
| | 7:00 | 1088.0 | | | 2065 |
| 2/24/69 | 10:00 pm | 1115.0 | | | 2070 |

TABLE IV

| Date | Time | Δt (Hrs) | Bottom Hole Pressure (psig) | Casing Pressure (psig) | Tubing Pressure (psig) |
|---------|----------|---------------------|--------------------------------------|------------------------------|------------------------------|
| 2/25/69 | 4:00 am | 1121.0 | 2586 | | |
| 2/26/69 | 5:00 am | 1146.0 | 2592 | | |
| | 9:00 | 1150.0 | | | 2075 |
| 2/27/69 | 6:00 am | 1171.0 | 2598 | | |
| | 8:00 pm | 1185.0 | | | 2085 |
| 2/28/69 | 8:00 pm | 1209.0 | | | 2090 |
| 3/01/69 | 12:00 am | 1225.0 | | 1240 | |
| | 8:00 pm | 1233.0 | | | 2090 |
| 3/02/69 | 9:00 pm | 1258.0 | | | 2095 |
| 3/03/69 | 3:00 pm | 1276.0 | | 1250 | |
| | 4:00 | 1277.0 | 2604 | | |
| | 8:00 | 1281.0 | | | 2095 |
| 3/04/69 | 5:00 pm | 1302.0 | | | 2100 |
| 3/05/69 | 1:00 am | 1310.0 | 2610 | | |
| | 7:00 pm | 1328.0 | | | 2100 |
| 3/06/69 | 9:00 am | 1342.0 | 2616 | | |
| | 6:00 pm | 1351.0 | | | 2100 |
| 3/07/69 | 6:00 am | 1363.0 | 2622 | | |
| | 4:00 pm | 1373.0 | | | 2105 |
| 3/08/69 | 5:00 pm | 1395.0 | | | 2105 |
| 3/09/69 | 6:00 pm | 1423.0 | | | 2110 |
| 3/10/69 | 4:00 am | 1433.0 | 2628 | | |
| | 10:00 pm | 1439.0 | | 1270 | |

| <u>Date</u> | <u>Time</u> | <u>Δt (Hrs)</u> | <u>Bottom Hole Pressure (psig)</u> | <u>Casing Pressure (psig)</u> | <u>Tubing Pressure (psig)</u> |
|-------------|-------------|--|--|---------------------------------------|---------------------------------------|
| 3/13/69 | 1:00 am | 1502.0 | 2633 | | |
| | 10:00 | 1511.0 | | 1275 | |
| 3/14/69 | 11:00 pm | 1548.0 | 2639 | | |
| 3/15/69 | 11:00 am | 1560.0 | 2639 | 1285 | |

END OF BUILD-UP TEST

Bottom Hole Pressure Gauge

Ball Brothers Research Corporation
 Slim Sentry MK 9 P
 0 to 3000 psi element
 landed at 8000' KBM

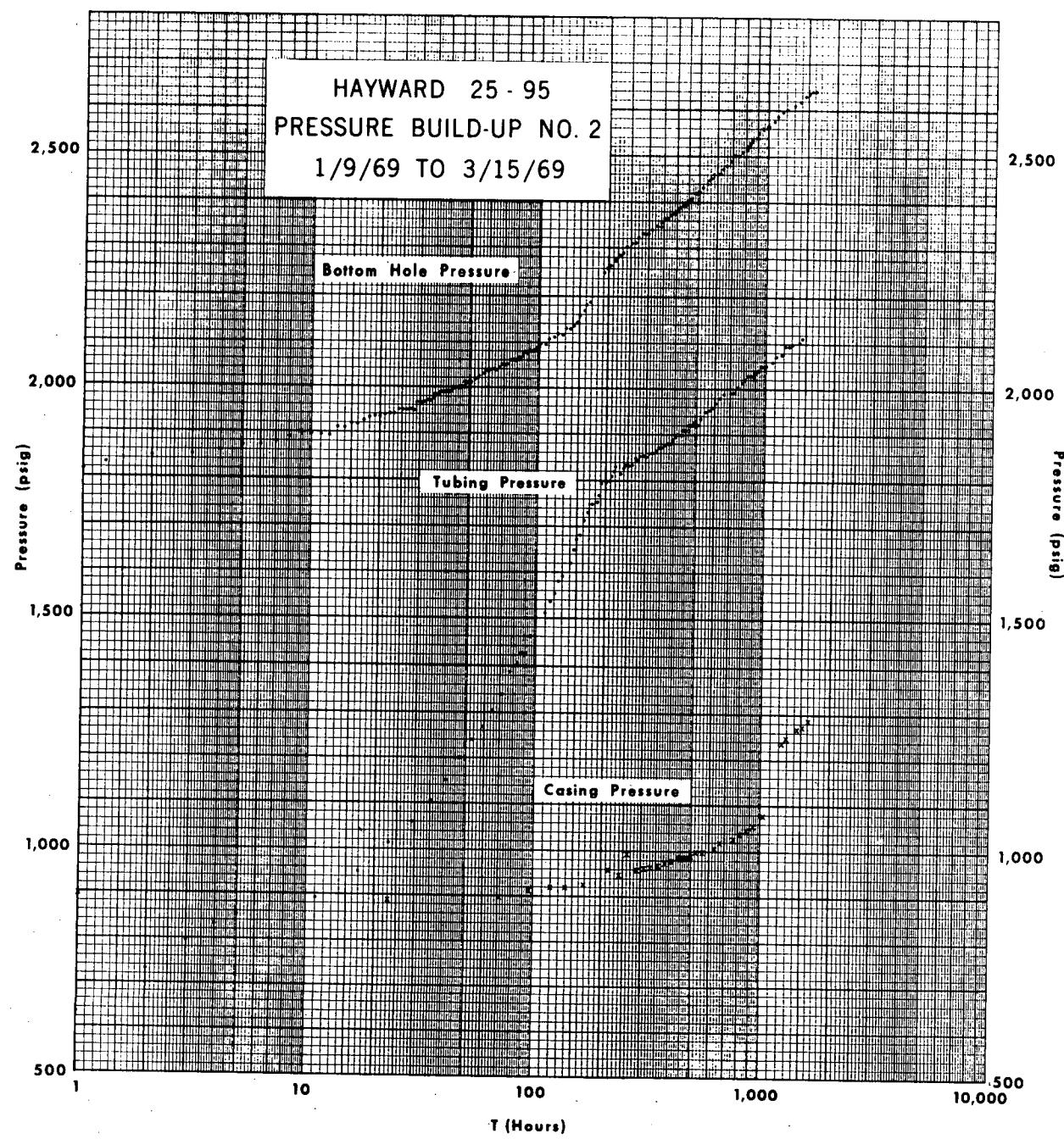


FIGURE 7

REPORT OF ANALYSIS

F.S.- 11790 M.S. N-45097 H 0.00 OBS. PRES. 66.9 CAL. PRES. 64.0
 STATE- COLORADO COUNTY- GARFIELD
 FIELD- RULISON WELL NAME- HAYWARD NO. 25-95
 LOCATION- SEC. 25, T7S, R95W OWNER- AUSTRAL OIL CO.
 DATE COMPLETED- 05/06/68 DATE SAMPLED-
 SAMPLED BY-
 NAME OF PRODUCING FORMATION- MESAVERDE
 DEPTH IN FEET- 7302 THICKNESS IN FEET- 1162
 SHUT IN WELLHEAD PRES., PSIG- OPEN FLOW, MCF/D- 15

CHECK OF DATA-
 THE WELL DATA ARE ACCURATE, () WITHOUT CORRECTION, () AS CORRECTED ABOVE.

REMARKS-

ANALYSIS-

| | | | | | |
|---------------|--------|----------------|---------|----------|---------|
| METHANE | 90.1 % | NORMAL PENTANE | TRACE % | OXYGEN | 0.0 % |
| ETHANE | 4.6 % | ISOPENTANE | .2 % | ARGON | 0.0 % |
| PROPANE | 1.2 % | CYCLOPENTANE | .1 % | HYDROGEN | TRACE % |
| NORMAL BUTANE | .2 % | HEXANES PLUS | .2 % | H2S | 0.0 % |
| ISOBUTANE | .3 % | NITROGEN | .1 % | CO2 | 2.8 % |
| SPECIFIC GRAV | .634 | | | HELUM | 0.00 % |
| | | | | TOTAL | 99.8 % |
| | | | | | 1066. |

CALCULATED GROSS BTU/CU. FT., DRY AT 60 DEG. F AND 30 IN. MERCURY-

PERMISSION FOR RELEASE:

Permission is hereby granted for the Bureau of Mines to release the above data, together with similar data released by other operators as public information and as parts of a series of papers on analyses of gases from various fields, states, or regions.

COMPANY AUSTRAL OIL COMPANY INCORPORATEDBY Miles Reynolds, Jr., Project Engineer

TITLE _____

COMPANY Austral Oil Co. Inc.COUNTY GarfieldFIELD RulisonSTATE ColoradoLEASE & WELL No. Hayward 25-95

FORMATION _____

TYPE OF TEST Temperature Survey #1DATE TESTED September 6, 1968

| Time | Depth Feet | Defl. in. | Temp. Psig | |
|-------------|---------------|--------------|---------------|-----------------------------------|
| pm 12:35 | Surface | .000 | 100.0 | Oil Level |
| | 5000 | .178 | 152.7 | Water Level |
| | 6000 | .278 | 171.6 | Temperature <u>214.2° @ 8400'</u> |
| | 6500 | .341 | 181.9 | Casing Pressure |
| | 6600 | .352 | 183.6 | Tubing Pressure <u>400#</u> |
| | 6700 | .364 | 185.3 | Elevation |
| | 6800 | .374 | 186.8 | Perforation |
| | 6900 | .385 | 188.3 | B H P @ ft. |
| | 7000 | .397 | 190.1 | Pressure Recorder No. |
| | 7100 | .408 | 191.6 | Range (Psi) <u>100° to 320°</u> |
| | 7200 | .421 | 193.4 | Clock <u>3 Hour</u> |
| | 7300 | .432 | 195.0 | Surveyed By: <u>Reed</u> |
| | 7400 | .442 | 196.4 | |
| | 7500 | .453 | 197.9 | |
| | 7600 | .470 | 200.1 | |
| | 7700 | .480 | 201.4 | |
| | 7800 | .489 | 202.6 | |
| | 7900 | .499 | 203.9 | |
| | 8000 | .511 | 205.4 | |
| | 8100 | .525 | 207.1 | |
| | 8200 | .539 | 208.8 | |



COMPANY Austral Oil Co. Inc.

COUNTY Garfield

FIELD Rulison

STATE: Colorado

LEASE & WELL No. Hayward 25-95

FORMATION _____

TYPE OF TEST Temperature Survey #1

DATE TESTED September 6, 1968

220

210

200

190

180

170

160

150

140

130

120

110

100

Austral Oil Company Inc.

Garfield Co., Colorado

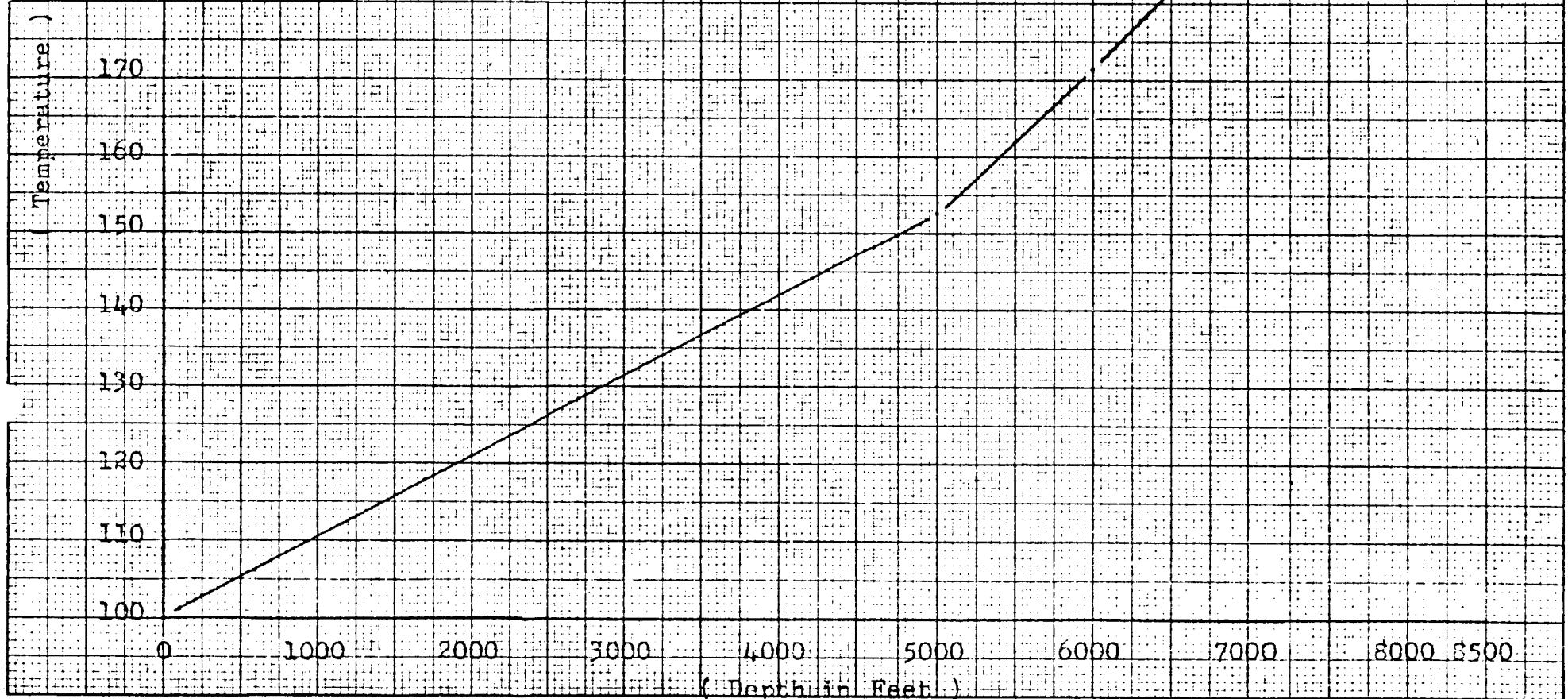
Bullison Field

Haywari 25-95

September 6, 1968

Temperature Survey #

214.2°





COMPANY Austral Oil Company
FIELD Rulison
LEASE & WELL No. Hayward 25-95
TYPE OF TEST Temperature Survey #2

COUNTY Garfield
STATE Colorado
FORMATION _____
DATE TESTED Sept 21, 1968

| Time | Depth Feet | Defl. in | Temp Pressure Psig | |
|---------|---------------|-------------|--------------------------|--|
| 12:15pm | Surface | .000 | 100.0 | Oil Level |
| | 5000 | .252 | 153.8 | Water Level |
| | 6000 | .384 | 172.8 | Temperature <u>217.0° @ 8400'</u> |
| | 6500 | .464 | 182.7 | Casing Pressure |
| | 6600 | .479 | 184.4 | Tubing Pressure <u>1540</u> |
| | 6700 | .494 | 186.2 | Elevation |
| | 6800 | .507 | 187.7 | Perforation |
| | 6900 | .523 | 189.3 | B H P @ ft. |
| | 7000 | .540 | 191.1 | Temp Recorder Recorder No. <u>S/N RT7 25900</u> |
| | 7100 | .555 | 192.7 | Range (Psi) Temp <u>100° - 290°</u> |
| | 7200 | .577 | 195.0 | Clock <u>3 Hour W/ DPLS</u> |
| | 7300 | .594 | 196.7 | Surveyed By: <u>Marshall</u> |
| | 7400 | .610 | 198.3 | |
| | 7500 | .628 | 200.0 | |
| | 7600 | .645 | 201.7 | |
| | 7700 | .661 | 203.3 | |
| | 7800 | .677 | 204.8 | |
| | 7900 | .692 | 206.2 | |
| | 8000 | .713 | 208.2 | |
| | 8100 | .737 | 210.3 | |
| | 8200 | .757 | 212.1 | |



COMPANY Austral Oil Company Inc.

COUNTY Garfield

FIELD Rulison

STATE Colorado

LEASE & WELL No. Hayward 25-95

FORMATION—

TYPE OF TEST Temperature Survey #2

DATE TESTED Sept. 21, 1968

220

210

200

190

180

170

160

150

140

130

120

110

100

Austral Oil Company Inc.

Garfield Co., Colorado

Rulison Field

Hayward 25-95

Temperature Survey #2

Range 100° - 290° S/N 25900

Sept. 21, 1968

Temperature

0

1000

2000

3000

4000

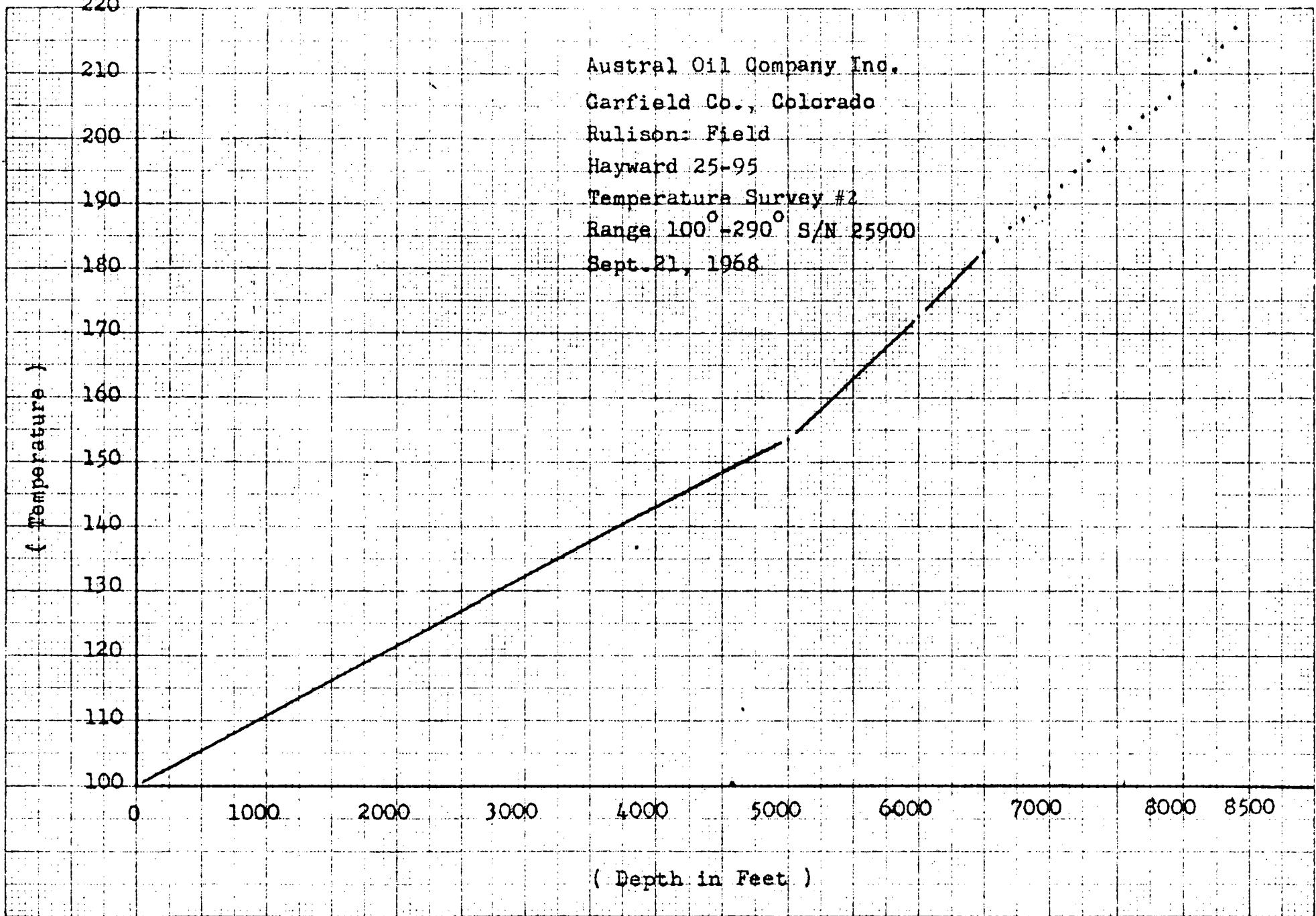
5000

6000

7000

8000 8500

(Depth in Feet)





COMPANY Austral Oil Company Inc.
 FIELD Rulison
 LEASE & WELL No. Hayward 25-95
 TYPE OF TEST Temperature Survey #3

COUNTY Garfield
 STATE Colorado
 FORMATION _____
 DATE TESTED Sept. 21, 1968

| Time | Depth Feet | Defl. in | Temp. Pressure Psig | |
|--------|---------------|-------------|---------------------------|---|
| 2:42pm | Surface | .000 | 100.0 | Oil Level |
| | 5000 | .169 | 150.8 | Water Level |
| | 6000 | .267 | 169.7 | Temperature <u>214.7° @ 8400'</u> |
| | 6500 | .328 | 179.8 | Casing Pressure |
| | 6600 | .339 | 181.5 | Tubing Pressure <u>1540</u> |
| | 6700 | .351 | 183.4 | Elevation |
| | 6800 | .361 | 184.9 | Perforation |
| | 6900 | .372 | 186.5 | B H P @ ft. |
| | 7000 | .384 | 188.2 | Temp Pressure Recorder No. <u>RT-7 SIN 17592</u> |
| | 7100 | .396 | 189.9 | Range (Psi) Temp <u>100°-320°</u> |
| | 7200 | .412 | 192.2 | Clock <u>3 Hour W/ DPLS</u> |
| | 7300 | .426 | 194.1 | Surveyed By: <u>Marshall</u> |
| | 7400 | .438 | 195.8 | |
| | 7500 | .450 | 197.5 | |
| | 7600 | .462 | 199.1 | |
| | 7700 | .475 | 200.8 | |
| | 7800 | .487 | 202.3 | |
| | 7900 | .498 | 203.7 | |
| | 8000 | .515 | 205.9 | |
| | 8100 | .531 | 207.8 | |
| | 8200 | .545 | 209.6 | |



COMPANY Austral Oil Company Inc.

COUNTY Garfield

FIELD Rulison

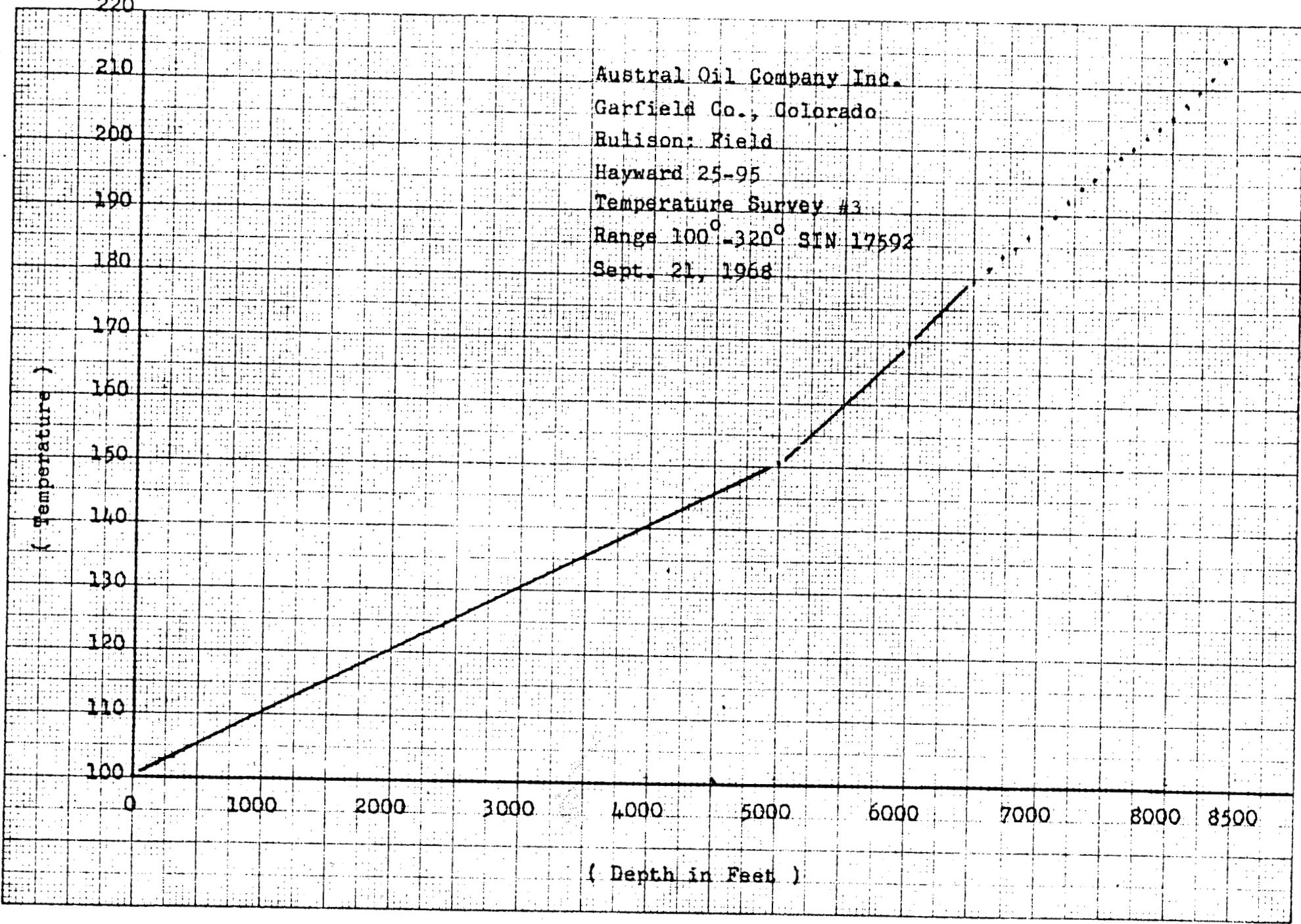
STATE Colorado

LEASE & WELL No. Hayward 25-95

FORMATION _____

TYPE OF TEST Temperature Survey #3

DATE TESTED Sept. 21, 1968



TREATMENT REPORT
DWL-494-I PRINTED IN U.S.A.

DOWELL DIVISION OF THE DOW CHEMICAL COMPANY

DATE
10-5-68

WELL NAME AND NUMBER

Hayward 25-95
POOLLOCATION
525 75 05WCUSTOMER REPRESENTATIVE
Mr Ed DavisTREATMENT NUMBER
15 03Wildcat
COUNTYFORMATION
Mesa Verda
STATEJOB DONE DOWN
TUBING A B C
CASINGALLOWABLE PRESSURE
TBG: 6000 CSGGarfield
TYPE OF SERVICE

Colorado

CO 2 Fracturing WF 40#

ANNULUS

CUST. NAME Austral Oil Company

ADDRESS 2700 Humble Bldg

Houston,

CITY, STATE & ZIP CODE Texas

REMARKS: Using 2 turbines 3 Allisons 5500 20/40

Sand 5500 # 20/40 Glass beads 1.350 # J133

6 units R. A. Mart

FOR CONVERSION PURPOSES 24 BBLS EQUALS 1000 GALLONS

ARRIVED ON LOCATION: 10:00 A.M.

TYPE OF WELL

OIL A GAS B

WATER

C

INJ.

D

AGE OF WELL

NEW WELL A REWORK B

TOTAL DEPTH

8400

CIRC. BHT

CASING SIZE

7 5/8

CASING DEPTH

8400

TUBING SIZE

3 1/2 & 2

TUBING LENGTH

1/8 2400 ft

LINER SIZE

5 1/2

LINER DEPTH

1600

PACKER TYPE

Baker

PACKER LENGTH

8100

OPEN HOLE CSG. OR ANRL. VOL.

60

TDG VOLUME

218

STATIC BHT

PERFORATED INTERVALS

DEPTH

NO. OF HOLES

DEPTH

NO. OF HOLES

DEPTH

NO. OF HOLES

TIME INJECTION PRESSURE

RATE BBLS IN CSG. TBG.

SERVICE REMARKS

| | | | | |
|------|----|------|--------|--|
| | | | | Safety Meeting |
| 1:50 | | 7000 | | Pressure test Dowell lines |
| 2:15 | | 400 | 2700 | Spear head w/500 gals mud acid CO 2 |
| 2:17 | | 400 | 2700 | Rod CO 2 |
| 2:23 | 14 | 85 | 4300 | Start 20/40 Sand 1/2 & R.A. Mart CO 2 |
| 2:33 | 24 | 345 | 5200 | Start 20/40 Glass Beads & R. A. Mart. CO 2 |
| 2:44 | 24 | 610 | 5500 | Flush CO 2 |
| 2:48 | 20 | 695 | 5500 | Flush Complete |
| | | 2000 | IMM | CO 2 truck broke down |
| | | 1900 | 15 min | had to get another tractor |
| | | 1500 | 30 min | to pull trailer. On location 2 hours late |
| | | | | Everything was water Frac 40# |
| | | | | Using 20 tons CO 2 |
| | | | | 5,500 # 20/40 Sand |
| | | | | 5,500 # 20/40 Glass beads |
| | | | | HHP 2600 |
| | | | | 6 units R. A. Mart |
| | | | | 1350 # J-133 5 gal J-13 ^{1/2} breaker |

| TIME LEFT LOCATION | AVG. LIQUID INJ. RATE | ADJ. INJ. RATE (SOLIDS INC.) | TOTAL FLUID PUMPED | PROPS AND LIQUIDS INJECTED | | |
|-----------------------|-----------------------|------------------------------|--------------------|----------------------------|-------|------|
| | | | | OIL | WATER | TYPE |
| 1600 MAX. PRESSURE | 20 | 20 | SHUT IN PRESSURE | | | |
| | | | IMMEDIATE | 15 MINUTE | | |

DOWELL LOCATION

5300

DOWELL ENGINEER

2000 1900

Vernal, Utah

K. D. Stringham

CALL BACK

DATE:

CUSTOMER REP. CONTACTED

CUSTOMER
CONSIDERED
SERVICE
UNKNOWN

PROD. BEFORE TREATMENT

PROD. AFTER TREATMENT

TEST

ALLOWABLE

DAYS TEST

ALLOWABLE

AUSTRAL OIL COMPANY

INCORPORATED

WELL HISTORY

WELL: Austral Oil Company Incorporated, Hayward #25-95

FIELD: Rulison

DRILLING BLOCK: 65-41 AFE NO.: 67-117

LOCATION: 2,235.93' east of west line and 1,694.81' north of south line of Section 25, T-7-S, R-95-W of 6th P. M., Garfield County, Colorado

ELEVATION: GL: 8,171.28'
KDB: 8,187.28'

DRILLING CONTRACTOR: Signal Drilling Company, Denver, Colorado

DRILLING SUMMARY:

- | | |
|-------------|---|
| 11-9-67 | Spudded well at 9:00 p.m. |
| 11-10-67 | Set and cemented 18" OD, #16 gauge corrugated conductor pipe (30') in 22" hole to a depth of 45 feet. |
| 11-13-67 | Ran I-ES and Acoustilog surveys at 518' and commenced reaming hole to 15 inches. |
| 11-14-67 | Set and cemented 10-3/4" OD 32.75# H-40 ST&C surface casing (484.58') in 15" hole to a depth of 500.58 feet. |
| 11-15-67 | Commenced air mist drilling below surface casing. Encountered formation water influx of 3 to 4 gallons per minute at 617 feet. Continued drilling to 865 feet. |
| 11-16-67 | Set Howco straddle packers at 591' and 641 feet. Pumped 3000 gallons of Zone Lock ARO 1 barrel/minute with 0 psi. Both packers leaked. Closed BOP and squeezed final 1500 gallons into formation with 200 psi. Dried hole and began drilling ahead with air below 865 feet. |
| 11-17-67 | Continued drilling with air to 2010 feet. While pulling out of hole, stuck drill pipe after bit began dragging at 700 feet. Worked free after 4 hours. Reamed to bottom. |
| 11-19-67 | Well began making approximately 4 barrels water per hour. Attempted to dry hole. Commenced air mist drilling and continued to 2070 feet. Continued air mist drilling to 2451 feet. Air mist with light foam drilling commenced below 2451 feet. |
| 11-20-67 | After drilling to 2785', reamed with stiff foam from 2290' to bottom. Began drilling ahead with stiff foam. |
| 11-21-67 | Continued air mist drilling to 2451 feet. Air mist with light foam drilling commenced below 2451 feet. |
| 11-23-67 | Reamed and conditioned hole at depth of 4030 feet. |
| 11-24-67 | Ran Induction Gamma-Ray log from 500-1148' and High Resolution Temperature survey from 530-1050 feet. Began conversion to drilling mud media. |
| 12-1 & 2-67 | Washed, reamed and conditioned hole. |
| 12-3-67 | Drilled with mud to 4125 feet. |
| 12-4-67 | Cut Core #1 in interval 4125-77 feet. |
| 12-7-67 | Conditioned hole following loss of returns at 4177 feet. |
| 12-8-67 | Regained circulation. Resumed drilling ahead below 4177 feet. |
| 12-9-67 | Commenced aerating mud at 4973 feet. Penetration rate increased from 4-5 minutes/foot to 3-4 minutes/foot. Drilled to 5326' with aerated mud. |
| 12-10-67 | |
| 12-14-67 | |

DRILLING SUMMARY (Continued):

- 12-18-67 Ran I-ES from 496-5694 feet. Continued below 5700' with normal mud drilling.
- 12-21-67 Cut Cores #2 and #3 in respective intervals from 6009-16' and 6016-23 feet.
- 12-22-67 Cut Cores #4 and #5 in respective intervals from 6023-32' and 6032-55 feet.
- 12-23-67 Cut Core #6 in interval 6055-62 feet.
- 12-25-67 Ran open hole DST #1 in interval from 6026.5'-6062 feet. (See test data in DST Record of this history.)
- 12-26-67 Began drilling ahead with mud below 6062 feet.
- 12-27-67 Lost 50 barrels mud while drilling at 6208 feet. Mixed LCM, circulated and resumed drilling.
- 12-29-67 Ran I-ES from 5490-6234 feet.
- 12-30-67 Ran Compensated Acoustilog survey from 497-6244 feet.
- 12-31-67 Began drilling ahead with mud below 6265 feet.
- 1-2-68 Ran I-ES from 6050-6362', Compensated Acoustilog from 6050-6350' and Gamma-Ray Epithermal Neutron survey from 496-6365 feet.
- 1-3-68 Ran Compensated Densilog from 496-6361', Variable Amplitude Density log from 496-6359', Temperature survey from 496-6362' and Directional survey from 550-6300 feet.
- 1-5-68 Conditioned hole. Attempted 14 Sidewall Cores, recovered 12. Ran Formation Sample Test at 4226 feet.
- 1-6 - 9-68 Continued with Formation Sample Tests at 3920', 3288', 2310', 2053' and 2029 feet. (Stuck Sidewall Fluid Sampler at 3906' while attempting test at 3920 feet. Recovery operation required 48 hours.)
- 1-11 & 12-68 Set and cemented 7-5/8" OD 26.40# J-55, N-80 and S-95 Intermediate casing (6350.80') in 9-7/8" holes to a depth of 6367 feet.
- 1-14 & 15-68 Drilled DV tool and tested casing to 1200 psi. Ran Gamma Ray-Neutron (cased hole) log from 5350-6354' and Cement Bond log from GL to 6348 feet. Perforated with 4 SPF and ran DST #1 in intervals from 6145-48' and 6155-65' (ES). (See test data in DST Record of this history.) Squeezed perforations 6145-48' and 6155-65' in four stages w/150 sacks cement per stage.
- 1-18 - 20-68 Drilled cement and set RTTS tool at 6110 feet. Broke perforations down at 3250 psi. Squeezed formation in three additional stages w/150 sacks cement per stage.
- 1-21-68 Drilled cement and set RTTS tool at 6053 feet. Tested perforations to 3000 psi.
- 1-22 & 23-68 Blew hole dry and began air mist drilling below 6367 feet.
- 1-26-68 Encountered very small amount of gas while making trip at 7060 feet. Cut Core #1 in interval 7060-84 feet. Experienced difficulty in rerunning core barrel. Reamed hole from 6750'-6840 feet.
- 1-27-68 Top of core barrel plugged with cement scale. Well unloaded small amount of water.
- 1-28-68 Bit plugged while attempting to clean out hole. Unloaded shale, soap, gas and small amount of condensate at 6500 feet.
- 1-29-68 Drill pipe attempted to stick while cleaning out hole. Set Howco retrievable bridge plug at 2340'.
- 1-30-68 Filled hole with water and spotted 400# of sand on bridge plug. Circulated 6000 gallons of mud acid through 6400' of drill pipe.
- 1-31-68 Displaced acid and recovered bridge plug. Continued cleaning well. While blowing and drying hole, began injecting Microseal Powder. Continued drying hole using Calcium Stearate Powder at a rate of 25#/hour.

DRILLING SUMMARY (Continued):

- 2-2-68 While circulating and reaming, hole caved in. Began mixing mud with LCM material.
- 2-3-68 Reamed and washed to 7084 feet. While continuing to condition mud, lost partial returns.
- 2-4-68 Lowered viscosity and screened out heavy LCM material in preparation for additional coring.
- 2-5-68 Core barrel jammed while attempting Core #2.
- 2-6-68 Cut Cores #2 and #3 in respective intervals from 7087-100' and 7100-120 feet.
- 2-8 & 9-68 Cut Core #4 in interval from 7260-69 feet.
- 2-10-68 Cut Core #5 in interval from 7269-320 feet. Lost circulation (40 barrels) while drilling at 7338 feet. Increased LCM from 3 to 7# per barrel. Temporarily lost returns while drilling at 7345 feet. Continued drilling.
- 2-12-68 Cut Core #6 in interval from 7500-60 feet.
- 2-16 & 17-68 Cut Cores #7 and #8 in respective intervals from 7840-70' and 7870-900 feet.
- 2-19-68 Cut Core #9 in interval from 8060-95 feet.
- 2-20-68 Cut Core #10 in interval from 8095-120 feet.
- 2-23-68 Cut Core #11 in interval from 8350-410 feet.
- 2-24-68 Reached Total Depth 8516' at 11:00 a.m. Attempted to log. Tool stopped at 8480'. Cleaned out to bottom with bit.
- 2-25-68 Ran I-ES from 6362-8498', Compensated Acoustilog from 6360-8487', Variable Amplitude Density log from 6360-8492', Birdwell 3-Dimensional Velocity surveys in gross interval from 0-8479' and Gamma-Ray Epithermal Neutron survey from 6365-8496 feet.
- 2-26-68 Ran Compensated Densilog from 6360-8484', Temperature survey from 6362-8449' and Directional survey from 6400-8500 feet.
- 2-29-68 Set and cemented 5-1/2" OD 17# and 20# N-80 flush joint liner (2653.86') in 6-3/4" hole to a depth of 8514 feet. Top of 8514 feet. Top of liner at 5860.14 feet. After displacing 10 barrels of cement circulating pressure increased from 400 psi to 3500 psi. Was unable to move cement with pressure to 6500 psi. Pulled liner tools.
- 3-3-68 Drilled cement inside liner from 5871-910 feet. Set RTTS tool at 5855' and cemented top of liner with 400 sacks Class G cement.
- 3-4-68 Drilled cement from 5662-860 feet.
- 3-5 & 6-68 Attempted to blow hole dry and continued to drill cement inside liner from 5860-8484 feet.
- 3-7-68 Ran Gamma Ray-Neutron survey from 5750-8483' and Acoustic Cement Bond log from 5840-8478 feet.
- 3-8-68 Released drilling rig at 12:00 noon.

CASING RECORD:18" OD CONDUCTOR PIPE

Set 18" OD 16 gauge corrugated conductor pipe (30') in 22" hole at 45' and cemented w/75 sacks Class "G" cement w/2% CaCl₂. Job complete at 11:30 a.m., 11-10-67.

CASING RECORD
(Continued):10-3/4" OD SURFACE CASING

| | | |
|---------|--|----------------|
| 1 jt. | Larkin Float Shoe | 1.30' |
| | 10-3/4" OD 32.75# H-40 ST&C R-2 casing | 32.43 |
| 14 jts. | Larkin Float Collar | 1.50 |
| 15 jts. | 10-3/4" OD 32.75# H-40 ST&C R-2 casing | 449.35 |
| | Total | <u>484.58'</u> |
| | Elevation (GL to top of KDB) | 16.00 |
| | Casing set w/respect to KDB | 500.58' |

Cemented with 400 sacks of 50-50 Lite Poz with 2% CaCl plus 1/8# per sack cellophane, followed by 100 sacks Class "C" with 2% CaCl with 1/8# per sack cellophane. Good cement returns to surface.
Plug down at 2:00 a.m., 11-14-67.

7-5/8" OD INTERMEDIATE CASING

| | | |
|------------|---------------------------------------|------------------|
| 2 jts. | Howco Type "E" Float Shoe | 1.82' |
| | 7-5/8" OD 26.4# S-95 ST&C R-2 casing | 55.23 |
| 62 jts. | Howco Type "E" Float Collar | 1.60 |
| 1 jt. | 7-5/8" OD 26.4# S-95 ST&C R-2 casing | 1,702.55 |
| 6 jts. | 7-5/8" OD 26.4# N-80 ST&C/LT&C X-over | 41.75 |
| 12 jts. | 7-5/8" OD 26.4# N-80 LT&C R-3 casing | 246.79 |
| 46 jts. | Howco DV tool (2nd stage) | 2.03 |
| 75 jts. | 7-5/8" OD 26.4# N-80 LT&C R-3 casing | 504.56 |
| 1 piece | 7-5/8" OD 26.4# J-55 LT&C R-2 casing | 1,427.81 |
| 204 jts. & | Howco DV tool (3rd stage) | 2.03 |
| 1 piece | 7-5/8" OD 26.4# J-55 LT&C R-2 casing | 2,353.21 |
| | 7-5/8" OD 26.4# J-55 LT&C casing | 11.42 |
| | Total | <u>6,350.80'</u> |
| | Elevation (BHF to KDB) | 16.20' |
| | Casing set w/respect to KDB | <u>6,367.00'</u> |

Cemented using 20 barrels CW7 chemical wash, 294 sacks Lite Poz #3 with 4% gel and 2% CaCl plus 200 sacks Chem-Comp cement.
Plug down at 12:15 p.m., 1-11-68. Opened DV tool at 4315 feet. Circulated 6 hours. Recovered approximately 10 bbls. cement from above DV tool. Cement Stage #2 - 20 barrels CW7 chemical wash, 825 sacks Lite Poz #3 with 4% gel and 2% CaCl. Plug down 8:40 p.m., 1-11-68, with 1400 psi. Opened DV tool at 2381'. Circulated 6 hours. Recovered no cement from above DV tool. Cement Stage #3 - 20 barrels chemical wash, 1010 sacks Lite Poz #3 with 4% gel and 2% CaCl. Plug down at 4:35 a.m., 1-12-68 with 1200 psi. No cement returns to surface.

CASING RECORD
(Continued):

5-1/2" LINER SETTING

| | | |
|---------|---|------------------|
| 1 jt. | 5-1/2" OD BOT Shoe | 1.66' |
| 11 jts. | 5-1/2" OD 20# N-80 Hydril FJ R-3 casing | 42.02 |
| | 5-1/2" OD Stall Collar | .70 |
| 30 jts. | 5-1/2" OD 20# N-80 Hydril FJ R-3 casing (Ruff coated) | 468.91 |
| 20 jts. | 5-1/2" OD 20# N-80 Hydril FJ R-3 casing | 1,287.96 |
| 62 jts. | 5-1/2" OD 20# N-80 FJ pin x 5-1/2" OD 17# N-80 FJ Box X-over | 3.72 |
| | 5-1/2" OD 17# N-80 Hydril FJ R-3 casing | 831.51 |
| | Total | <u>2,636.48'</u> |
| | Liner Extension & BOT Hanger Type MC | 17.38' |
| | Total Over all | <u>2,653.86'</u> |
| | Bottom of liner w/respect to KDB | 8,514.00' |
| | Top of liner w/respect to KDB | 5,860.14' |

Mixed 500 sacks Ken-Comp cement with 2/10 D74 retarder. After displacing cement 10 barrels circulating pressure increased from 400 psi to 3500 psi. Unable to move cement with pressure up to 6500 psi. Pulled out of hole. Laid down 3800' of 3-1/2" drill pipe with cement. Found cement in top of liner at 5863 feet. Displaced hole with water. Attempted to unload water with air. Unable to dry up hole due to water from back of 5-1/2" liner. Filled hole with water. Drilled cement from 5871-5910' at rate of 50' per hour. Pulled bit. Set RTTS tool at 5855 feet. Pumped back of liner at 200 psi. Reset tool at 5455 feet. Mixed 400 sacks Class "G" cement with 1% B-60 and 2/10 D13 retarder. Pumped cement below tool to 5700' at 1-1/4 barrels per minute at 0 psi. Shut pump down. Drill pipe went on vacuum. Closed valve. Waited on cement 8 hours. Filled drill pipe with 1-1/2 barrels water. Pulled RTTS tool.

CORING RECORD:

Sidewall Cores - Attempted 14 sidewall cores and recovered 12.
(See Geological files for analysis data.)

Conventional Cores -

| <u>NUMBER</u> | <u>FORMATION</u> | <u>INTERVAL</u> | <u>RECOVERY</u> |
|---------------|------------------|-----------------|---------------------------------------|
| #1 | Wasatch | 4125-177' | 34' |
| #2 | Wasatch | 6009-016' | 6'6"-Hard sand & shale |
| #3 | Wasatch | 6016-023' | 7' - Hard sand |
| #4 | Wasatch | 6023-032' | 9' - Sand |
| #5 | Wasatch | 6032-055' | 23' - Sand |
| #6 | Wasatch | 6055-062' | 7' - Sand |
| #1 | Mesaverde | 7060-084' | 10'- Sand w/6" shale |
| #2 | Mesaverde | 7087-100' | 13'6"-Sand w/6" shale |
| #3 | Mesaverde | 7100-120' | 19'6"-Sand, shale, black silkstone |
| #4 | Mesaverde | 7260-269' | 8'4"-Sand w/shale streaks |
| #5 | Mesaverde | 7269-320' | 51' -Sand and shale |
| #6 | Mesaverde | 7500-560' | -- Sand and shale |
| #7 | Mesaverde | 7840-870' | 32.3'-Sand and shale |
| #8 | Mesaverde | 7870-900' | 30' -Sand and shale |

CORING RECORD (Continued):

| <u>NUMBER</u> | <u>FORMATION</u> | <u>INTERVAL</u> | <u>RECOVERY</u> |
|--------------------------------|---|--|----------------------|
| #9 | Mesaverde | 8060-095' | 35' - Sand and shale |
| #10 | Mesaverde | 8095-120' | 25' - Sand and shale |
| #11 | Mesaverde | 8350-410' | 60' - Sand and shale |
| <u>DRILL STEM TEST RECORD:</u> | | | |
| | <u>INTERVAL</u> | <u>TEST DATA</u> | |
| #1 | 6026.5-6062' (Open hole) | Opened tool at 1:35 p.m., 12-25-67 with very weak blow for 5 minutes. Shut tool in at 6:41 p.m. Took 30 minute SIP. Opened tool at 7:14 p.m. with very weak blow. No blow at 7:16 p.m. Closed tool at 8:25 p.m. Took 1 hour 10 minutes SI. Pulled tool at 9:35 p.m. Recovered 60' of mud. Mud titrated the same as the mud in mud system. ISIBHP 2100 psi, IFBHP 55 psi, FFBHP 55 psi, FSI BHP 1437 psi. Hydrostatic 2887 psi. | |
| #1 | 6145-6165' (Cased hole) | Opened tool at 5:15 a.m., 1-15-68 with very weak blow. Well dead at 5:17 a.m. Closed tool at 5:20 a.m. Took 30 minute SIBHP. Pulled tool free. Lowered tool through perforations. Pulled tool. Recovered 60' of mud. 30 minute ISIBHP 103 psi, IFBHP 0 psi, FFBHP 9 psi, 30 minute stabilized SIBHP 83 psi. Hydrostatic 2964 psi. | |
| <u>LOGGING RECORD:</u> | <u>COMPANY & TYPE</u> | <u>INTERVAL</u> | <u>DATE</u> |
| #1 | Lane Wells - I-ES | 48- 514' | 11-13-67 |
| #1 | Lane Wells - Compensated Acoustilog | 48- 510' | 11-13-67 |
| #1 | Schlumberger - Temperature Survey | 530-1050' | 12-3-67 |
| #1 | Schlumberger - Induction Gamma-Ray | 500-1148' | 12-3-67 |
| #2 | Lane Wells - I-ES | 496-5694' | 12-18-67 |
| #3 | Lane Wells - I-ES | 5490-6234' | 12-29-67 |
| #2 | Lane Wells - Compensated Acoustilog | 497-6244' | 12-30-67 |
| #4 | Lane Wells - I-ES | 6050-6362' | 1-2-68 |
| #3 | Lane Wells - Compensated Acoustilog | 6050-6350' | 1-2-68 |
| #1 | Lane Wells - G-R Epithermal N. | 496-6365' | 1-2-68 |
| #1 | Lane Wells - Compensated Densilog | 496-6361' | 1-3-68 |
| #1 | Lane Wells - Variable Amplitude Density | 496-6359' | 1-3-68 |
| #1 | Lane Wells - Temperature Survey | 496-6362' | 1-3-68 |
| #1 | Lane Wells - Directional Survey | 550-6300' | 1-3-68 |
| #1 | Lane Wells - Formation Test | 4226' | 1-5-68 |
| #2 | Lane Wells - Formation Test | 3920' | 1-6-68 |
| #3 | Lane Wells - Formation Test | 3288' | 1-8-68 |
| #4 | Lane Wells - Formation Test | 2310' | 1-9-68 |
| #5 | Lane Wells - Formation Test | 2053' | 1-9-68 |
| #6 | Lane Wells - Formation Test | 2029' | 1-9-68 |
| #1 | Lane Wells - GR-N (Cased hole) | 5350-6354' | 1-14-68 |
| #1 | Lane Wells - Acoustic Cement Bond | 0-6348' | 1-14-68 |
| #5 | Lane Wells - I-ES | 6362-8498' | 2-25-68 |
| #4 | Lane Wells - Compensated Acoustilog | 6360-8487' | 2-25-68 |
| #2 | Lane Wells - Variable Amplitude Density | 6360-8492' | 2-25-68 |
| #1 | Birdwell - 3-Dimensional Velocity | 6300-8474' | 2-25-68 |

LOGGING RECORD
(Continued):

| | COMPANY & TYPE | INTERVAL | DATE |
|----|-----------------------------------|------------|---------|
| #2 | Birdwell - 3-Dimensional Velocity | 6410-8479' | 2-25-68 |
| #3 | Birdwell - 3-Dimensional Velocity | 6300-8477' | 2-25-68 |
| #4 | Birdwell - 3-Dimensional Velocity | 0-6390' | 2-25-68 |
| #2 | Lane Wells - G-R Epithermal N. | 6365-8496' | 2-25-68 |
| #2 | Lane Wells - Compensated Densilog | 6360-8484' | 2-26-68 |
| #2 | Lane Wells - Temperature Survey | 6362-8449' | 2-26-68 |
| #2 | Lane Wells - Directional Survey | 6400-8500' | 2-26-68 |
| #2 | Lane Wells - Acoustic Cement Bond | 5840-8478' | 3-7-68 |
| #3 | Lane Wells - GR-N (Cased hole) | 5750-8483' | 3-7-68 |

N O T E

This well history describes only the drilling of the Hayward #25-95 from the commencement of operations on 11-9-67 through the setting of the 5-1/2" OD liner at 8560' and rig release on 3-8-68. Upon completion of the well a supplement to this report covering the completion operation will be issued.

RT:cj RT
4-24-68

AUSTRAL OIL COMPANY

INCORPORATED

COMPLETION SUMMARY

WELL: Austral Oil Company Incorporated, Hayward #25-95
FIELD: Rulison
DRILLING BLOCK: 65-41 AFE NO.: 67-117
LOCATION: 2,235.93' east of west line and 1,694.81' north of south line of Section 25, T-7-S, R-95-W of 6th P.M., Garfield County, Colorado.
ELEVATION: GL: 8,171.28'
KDB: 8,187.28'
COMPLETION CONTRACTOR: Barker Well Service, Grand Junction, Colorado.
COMPLETION SUMMARY:
3-16-68 Moved in completion rig.
3-20-68 Finished rigging up. Picked up 2-3/8" tubing workstring.
3-21-68 Washed to 8,485'. Ran GR-N survey from 5,800-8,485'. Perforated with 4 holes at 7,880' (GR). Set Baker Model K cement retainer at 7,010' (GR). Perforated 4 holes at 7,000' (GR).
3-22/23-68 Landed Baker stinger in retainer at 7,010'. Unable to break circulation behind casing. Pulled stinger and squeezed perforations at 7,000' in three stages with a total of 385 sacks cement. Tool set at 6,935'. Was unable to reverse third stage cement with 2,000 psi. Laid down 23 joints cemented tubing.
3-24-68 Drilled cement from 6,935' to 7,000' and tested perforations to 2,500 psi.
3-25/26-68 Squeezed perforations at 7,880' in two stages with a total of 270 sacks cement. Tool set at 7,800'. Final pressure 4200 psi.
3-27-68 Drilled cement from 7,800' to 7,880' and cleaned hole to 8,460'.
3-28-68 Perforated 8,030-8,034' (GR), 2 holes per foot.
3-29-68 Ran Hydrologic Test #1 (See DST record). Ran Acoustic cement bond log from 5,800-8,455'.
to
4-1-68 Squeezed perforations 8,030-8,034' with 185 sacks cement, final pressure 4,000 psi. Perforated through tubing in interval 7,630'-7,631', four (4) holes. Squeezed in three stages with a total of 550 sacks cement. Tool set at 7,595'. Final pressure 4200 psi. Perforated through tubing in interval from 7,346' to 7,347' (GR), four (4) holes. Squeezed in three stages with a total of 550 sacks cement. Tool set at 7,315'. Final pressure 5300 psi. Drilled cement from 7,320' to 7,348' and 7,584' to 7,625'. Set tool at 7,318' and tested perforations 7,346-47' to 6,000 psi.
4-2-68 Drilled cement from 7,584 to 7,632' and washed and reamed to 7,687'. Drilled cement from 7,989 to 8,032' and washed to 8,460'.
Hayward (65-41) #25-95

COMPLETION
SUMMARY Cont'd.

- 4-3-68 Perforated 7,614-7,620' (GR), 2 holes per foot. Ran Hydrologic Test #2. (See DST record).
- 4-4-68 Squeezed perforations with 120 sacks cement. Tool set at 7,580'. Final pressure 4700 psi. Perforated 7,328-7,336' (GR), 2 holes per foot.
- 4-5-68 Ran Hydrologic Test #3. (See DST record). Squeezed perforations with 165 sacks cement. Tool set at 7,294'. Final pressure 4200 psi. Perforated 7,212-7,214' (GR), 2 holes per foot.
- 4-6/7-68 Ran Hydrologic Test #4. (See DST record). Squeezed perforations in three stages with a total of 600 sacks cement. Tool set at 7,185'. Final pressure 3000 psi.
- 4-8-68 Perforated 7,082-7,088' & 7,092-7,096' (GR), with 2 holes per foot.
- 4-9/10-68 Ran Hydrologic Test #5. (See DST record). Squeezed perforations in three stages with a total of 580 sacks cement. Tool set at 7,068'. Final pressure 1600 psi. Drilled cement from 7,058' to 7,106'. Tested perforations 7,082-7,088' and 7,092-7,096', broke down at 3200 psi.
- 4-11-68 Squeezed perforations with one additional stage, 40 sacks cement. Tool set at 7,060'. Final pressure 5500 psi.
- 4-12-68 Drilled cement from 7,061' to 7,619'. Ran Acoustic cement bond log from 8,461-7,900'.
- 4-14/15-68 Unloaded water in casing using air compressors.
- 4-16-68 Perforated Zone #1 intervals 8,200-08', 8,280-88', 8,318-26', 8,430-34', 8,440-44' and 8,448-64', 2 holes per foot. 30 minute test, well flowed 57 MCFD. Perforated 8,148-54', 8,156-72' and 8,200-08', 2 holes per foot. 1-1/2 hour test well flowed at rate of 80 MCFD.
- 4-17-68 Ran DST, Zone #1 (8,148-8,464'). (See DST record). Tested Zone #1, 27 MCFD. Perforated Zone #2 in intervals 8,050-60' and 8,066-72' with 2 holes per foot - no increase in flow rate. Perforated intervals 7,886-90', 7,892-14' and 7,952-66' with 2 holes per foot. No increase in flow rate.
- 4-18-68 Ran DST, Zone #2 (7,886-8,072'). (See DST record).
- 4-19/20-68 Set bridge plug at 8,090', tool at 8,020' and ran BHP bomb. No water influx detected from intervals 8,050-60' and 8,066-72'. Isolated remaining perforated intervals of Zone 2 - no water influx detected with BHP bomb.
- 4-21-68 Perforated Zone #3, intervals 7,634-42', 7,648-54', 7,668-78', 7,680-86', 7,720-34', 7,776-82', 7,812-24' and 7,834-44' with 2 holes per foot. Ran DST, Zone #3 (7,634-7,844'). Tested Zone 3, 3 MCFD. (See DST record).
- 4-22/23-68 Unable to recover bridge plug. Released same and pushed to bottom (top of junk 8,455'). Recovered 1,020' water inside tubing string. Titrated 4540 ppm/NaCl. Began unloading water from hole. Blew hole dry.
- 4-24/25-68 Perforated Zone #4, intervals 7,302-08', 7,402-04', 7,410-16', 7,480-84', 7,526-30', 7,554-38', 7,540-44', 7,550-54', 7,556-68', and 7,570-76' with 2 holes per foot.
- 4-26-68 Tested Zone #4 (7,302-7,576'), 1.39 MCFD. (See DST record). Set bridge plug at 7,600'. Blew hole dry.
- 4-27-68 Tested Zone #4 (7,302-7,576'), 1.39 MCFD. (See DST record). Set bridge plug at 7,600'. Blew hole dry.

Page 3

**COMPLETION
SUMMARY Cont'd.**

| | |
|----------|--|
| 4-28-68 | Ran temperature survey from 7,100'-7,598'. Found water at 7,400'. Continued blowing hole. |
| 4-29-68 | Ran temperature survey 7,000'-7,600'. Found water level at 7,564'. Rate of influx estimated at 2 gallons per hour. Retreived bridge plug set at 7,600'. |
| 4-30-68 | Continued blowing hole. Well tested, 2.75 MCFD. |
| 5-1/2-68 | Continued blowing hole and testing well. |
| 5-3-68 | Ran temperature survey from 7,000-8,438' and continued testing well. |
| 5-4/5-68 | Continued blowing hole. Hole dry. |
| 5-6-68 | Ran tubing with Guiberson RMC-1 Packer at 7,284'. Nippled up well- head equipment. Tested 12.5 MCFD. <u>Released rig at 12:00 midnight.</u> (See Well History) |

CASING RECORD:

TUBING RECORD:

TUBING SETTING

| | | |
|----------|---|--------------------|
| | 2-3/8" OD 8rd X 5-1/2" Model RMC-1 Guiberson Packer w/8rd coupling on bottom | 5.44' |
| | Camco CB-1 Sleeve with D top recess (1 13/16" ID) | 2.63 |
| | 2-3/8" OD 8rd X 2-3/8" OD 10rd Coupling | .37 |
| 208 Jts. | 2-3/8" OD 4.6# J-55 Non-upset 10rd Tubing | 6,372.58 |
| | 2-3/8" OD 10rd X 2-3/8" OD EUE 8rd Nipple | .15 |
| | 2-3/8" OD 8rd EUE Coupling | .41 |
| 28 Jts. | 2-3/8" OD 4.7# J-55 8rd EUE Tubing | 886.46 |
| | 2-3/8" 8rd X 2-3/8" 8rd Tubing Hanger, Type UA-4 | .66 |
| <hr/> | <hr/> | <hr/> |
| 236 Jts. | Total | 7,268.70' |
| | Elevation (Tbg. head to KDB) | 15.30' |
| | Tubing set with respect to KDB | <hr/> 7,284.00' |

**DRILLSTEM TEST
RECORD:**

| <u>Interval</u> | <u>Test Data</u> |
|-----------------------------|---|
| A. Hydrologic Tests: | |
| Mesaverde 8030-34' | Open 3-3/4 hrs. Recovered 180' water, 790 ppm NaCl. IF 51#, FF 51#, 2 hr. SI 71#. |
| " 7614-20' | Open 3 hrs. Recovered 120' water, 660 ppm NaCl. 1 hr. ISI 650#, IF 45#, FF 45#, 2 hr. FSI 52#. |
| " 7328-36' | Open 3 hrs. Recovered 90' water, 165 ppm NaCl. 1 hr. ISI 2134#, IF 26#, FF 26#, 2 hr. FSI 909#. |

Hayward (65-41) #25-95

**DRILLSTEM TEST
RECORD: Cont'd.**

| <u>Interval</u> | <u>Test Data</u> |
|-----------------|------------------|
|-----------------|------------------|

A. Hydrologic Tests, Cont'd.

Mesaverde 7212-14'

Open 3 hrs. No recovery-tool leaked.
1 hr. ISI 2875#, IF 64#, FF 129#,
3 hrs. FSI 2876#. (Recovered 4 bbls.
water with swab while tool open -
1320 ppm NaCl.)
Open 3 hrs. Recovered 60' water,
1400 ppm NaCl. 1 hr. ISI 587#, IF
45#, FF 45#, 3 hr. FSI 2096#.

" 7082-96'

NOTE: An additional test, also part of the Hydrologic Testing Program, was taken in the Ohio Creek interval from 6,145-65' and was summarized in the Well History (Drilling Record) of this well.

B. Gas Tests:

Gas Zone #1 8148-464'

Open 7-1/2 hrs. Tested 24 MCFD. No
BHP data. 5 hr. SITP 125 psi.

Gas Zone #2 7886-8072'

Open 4-1/2 hrs. Tested 27 MCFD. 6 hr.
SITP 350 psi. Recovered 150' water,
9570 ppm NaCl. No BHP data.

Gas Zone #3 7634-7844'

Open 3 hrs. Tested 3 MCFD. Recovered
30' water, 4125 ppm NaCl. No BHP data.

Gas Zone #4 7302-576'

Open 4 hrs. Tested 2 MCFD. No recovery.
1 hr. ISI 26 psi., IF 9 psi, FF 9 psi,
6 hr. FSI 54 psi.

LOGGING RECORD:

Company and Type

Interval

Date

| | | | |
|----|--------------------------|--------------|---------|
| #4 | Lane Wells - GR&N | 5800-8484.5' | 3-21-68 |
| #3 | " - Acoustic Cement Bond | 5800-8455' | 3-28-68 |
| #4 | " - Acoustic Cement Bond | 6900-8461' | 4-12-68 |
| #1 | " - Temperature Survey | 7100-7598' | 4-28-68 |
| #2 | " - Temperature Survey | 7000-7600' | 4-29-68 |
| #3 | " - Temperature Survey | 7000-8438' | 5-3- 68 |

COMPLETION RECORD:

Reached TD 8,516' on 2-24-68. 5-1/2" OD Liner casing was set from 5,860' to 8,514' and rig was released 3-8-68. Operations to complete the well commenced on 3-20-68. The well was perforated in the gross interval from 7302' to 8464' and on test flowed gas at a daily rate of 12.5 MCF with a 16 psi flowing tubing pressure on a 1/8" plate. Well completed on 5-6-68.

MR,Jr./RLT:nbk
6-4-68

Hayward (65-41) #25-95

R-EX SCHEMATIC DIAGRAM

No cement to surface
behind 10-3/4" csg. on
Stage #3.

7-5/8" stage collar @ 2,381'
No cement recovered.

7-5/8" stage collar @ 4,315'
Recovered 10 bbl. cement.

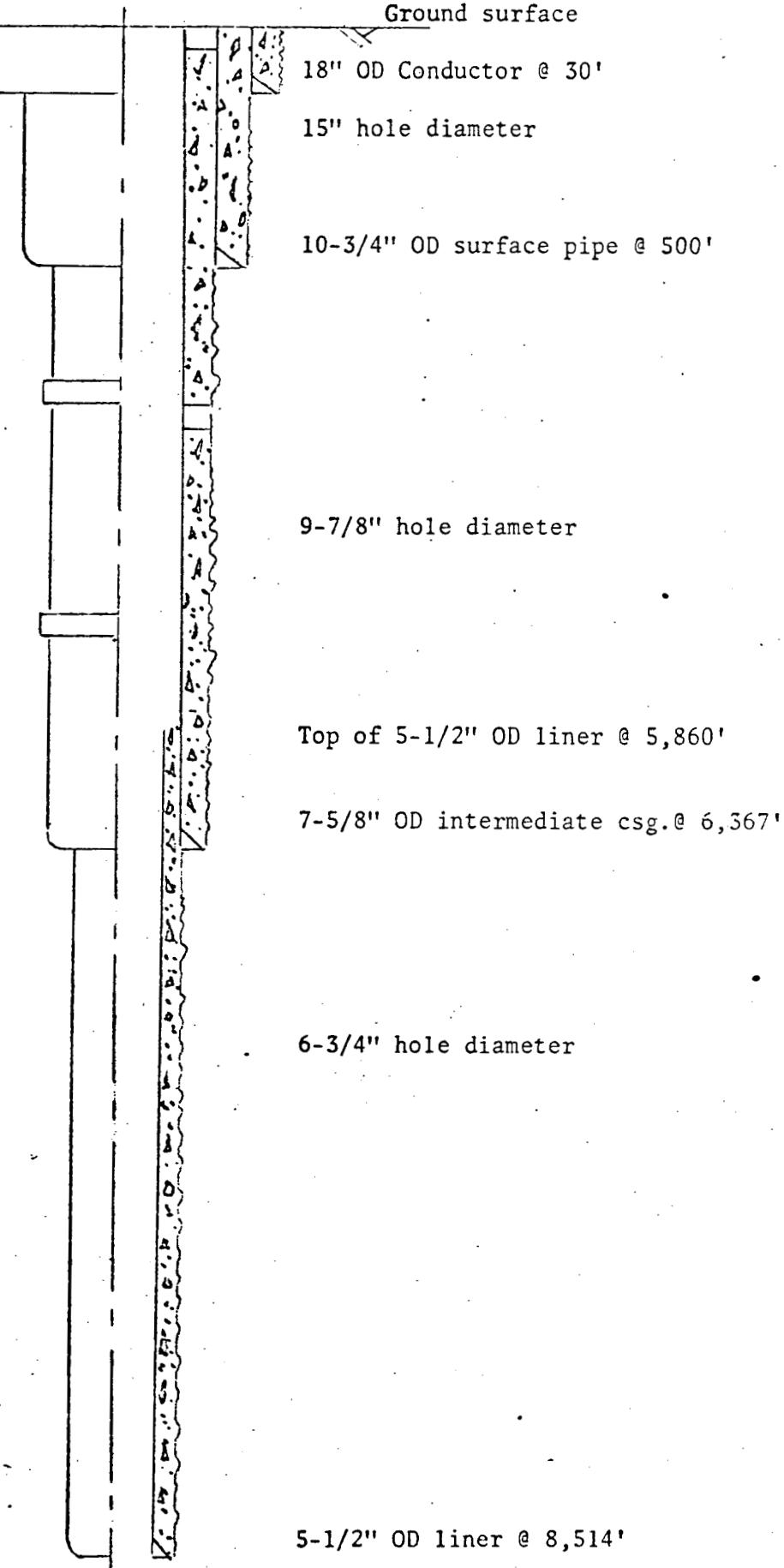
Squeeze cemented from top of
liner down to 6,850'.

Secondary squeeze cementing
made through perforations:

- 7,000-01
- 7,082-96
- 7,212-14
- 7,328-36
- 7,346-47
- 7,614-20
- 7,630-31
- 7,880-81
- 8,030-34

Cemented from bottom up to
7,950' on primary effort -
cement flash set.

Total depth drilled, 8,516'



AUSTRAL OIL COMPANY

INCORPORATED

TESTING SUMMARY

WELL: Austral Oil Company Incorporated, Hayward #25-95

FIELD: Rulison

DRILLING BLOCK: 65-41

LOCATION: 2,235.93' east of west line and 1,694.81' north of south line of Section 25, T-7-S, R-95-W of 6th P.M., Garfield County, Colorado.

ELEVATION: GL: 8,171.28'
KDB: 8,187.28'

SUMMARY:

5-10-68 to 5-31-68 Well shut in 4:00 p.m., 5-10-68, for initial pressure build-up. Surface wellhead pressure monitored and recorded daily. Maximum shut-in surface pressure recorded 2,000 psi (dwt) 5-31-68.

5-31-68 to 6-22-68 Initial draw-down test commenced 2:00 p.m., 5-31-68, at rate of approximately 160 MCFD. Static bottom hole pressure survey was run 5-31-68. Two flowing bottom hole pressure surveys and two flowing bottom hole temperature surveys were run on 6-3-68 and 6-4-68. Schlumberger Packer Flowmeter and computerized Differential Temperature surveys were run on 6-7-68. Flow rates monitored and recorded daily.

6-22-68 to 7-28-68 Kuster surface recording bottom hole pressure equipment placed in service on 6-22-68 with instrument installed at a depth of 7250'. Well shut in for pressure build-up test 8:30 p.m., 6-22-68. Surface wellhead pressure and bottom hole pressure monitored and recorded daily. Maximum shut-in surface pressure recorded 2,002 psi (dwt), 7-28-68.

8-1-68 to 8-8-68 Moved in workover rig. Pulled tubing and packer. Removed water accumulation in bottom of wellbore with sandline bailer. Reperforated lower two zones in the same gross intervals as were originally perforated, 7,886'-8,072' and 8,148-8,464', 2 holes per foot with select fire bullet guns. Ran tubing & packer - set packer immediately above reperforated zones at a depth of 7,856'. Installed Kuster instrument at a depth of 7,850'.

8-8-68 to 8-22-68 Well shut in 11:00 a.m., 8-8-68, for additional pressure build-up. Surface wellhead pressure and bottom hole pressure monitored and recorded daily. Test was terminated prematurely due to malfunction of Kuster instrument. Tool became stuck in the tubing sleeve at 7,850', and it was necessary to blow the well down in order to retrieve the instrument.

8-23-68 Kuster instrument to be repaired and reinstalled at a depth of 7,850'. Build-up test to be resumed.

Hayward (65-41) #25-95

TESTING SUMMARY

Page 2

| <u>LOG & SURVEY RECORD:</u> | <u>Company</u> | <u>Type</u> | <u>Maximum Depth</u> | <u>Date</u> |
|---------------------------------|---------------------------|------------------------|----------------------|-------------|
| #1 | Marshall Wireline Service | Static BHP Survey | 8,475' | 5-31-68 |
| #1 | " " " | Flowing BHP " | 8,200' | 6 -3-68 |
| #2 | " " " | " " " | 8,475' | 6 -3-68 |
| #1 | " " " | " BHT " | 8,450' | 6 -3-68 |
| #2 | " " " | " " " | 8,450' | 6 -4-68 |
| #1 | Schlumberger | Packer Flowmeter Log | | 6 -7-68 |
| #1 | " | Differential Temp. Log | 8,420' | 6 -7-68 |
| #1 | Marshall Wireline Service | 120 hr. BHP Build-up | 7,250' | 7-4/9-68 |
| #2 | " " " | 90 hr. " " | 7,250' | 7-11/15-68 |
| #2 | " | Static BHP Survey | 8,450' | 7-15-68 |

TUBING RECORD:TUBING SETTING

| | | |
|----------|--|-----------|
| 208 Jts. | 2-3/8" OD 8rd X 5-1/2" Model RMC-1 Guiberson Packer w/8rd coupling on bottom | 5.44' |
| | Camco CB-1 Sleeve with D top recess (1 13/16" ID) | 2.63 |
| | 2-3/8" OD 8rd X 2-3/8" OD 10rd Coupling | .37 |
| | 2-3/8" OD 4.6# J-55 Non-upset 10rd Tubing | 6,372.58 |
| | 2-3/8" OD 10rd X 2-3/8" OD EUE 8rd Nipple | .15 |
| | 2-3/8" OD 8rd EUE Coupling | .41 |
| 46 Jts. | 2-3/8" OD 4.7# J-55 8rd EUE Tubing | 1,458.12 |
| | 2-3/8" 8rd X 2-3/8" 8rd Tubing Hanger, Type UA-4 | .66 |
| 254 Jts. | Total | 7,840.36' |
| | Elevation (Tbg. head to KDB) | 15.30' |
| | Tubing set with respect to KDB | 7,855.66' |

*MR.*MR, Jr.:nbk
8-23-68

Hayward (65-41) #25-95

AUSTRAL OIL COMPANY

INCORPORATED

SUPPLEMENTAL TESTING SUMMARY

WELL: Austral Oil Company Incorporated, Hayward #25-95

FIELD: Rulison

DRILLING BLOCK: 65-41

LOCATION: 2,235.93' east of west line and 1,694.81' north of south line of Section 25, T-7-S, R-95-W of 6th P.M., Garfield County, Colorado.

ELEVATION: GL: 8,171.28'
KDB: 8,187.28'

SUMMARY:

9-6-68 Ran bottom-hole temperature survey. Maximum BHT recorded at 8,400', 214.2°F.
9-7-68 Reinstalled Kuster instrument at 8,400'. Shut well in for additional build-up test. Kuster instrument failed - pulled to
9-20-68 for repairs and recalibration on 9-12-68. Left well shut in.
9-21-68 Ran bottom-hole temperature survey using two individual Amerada thermistors. Maximum BHT recorded at 8,400', 214.7°F and 217.0°F.
9-30-68 Pulled tubing and packer. Set Baker Model N bridge plug at 8,190'.
to Set Baker Model D packer at 8,100'. Ran tubing. Tested perforations 8,148-72' at rate of 5.64 MCFD. Treated perforations with
10-11-68 500 gallons MCA acid followed by 2,100 gallons Waterfrac-40 (pad volume), 11,000 gallons Waterfrac-40 (1/2# gal. 20-40 sand), 11,000 gallons Waterfrac-40 (1/2# gal. 20-40 glass beads), 2,100 gallons Waterfrac-40 (flush). All frac fluids pumped contained 600 cubic ft./bbl. CO₂. Six pounds radioactive sand dispersed throughout sand and beads. Maximum injection pressure 5,700#, average 5,300# @ 20 BPM. ISIP 2,000#, 15 min. 1,900#, 60 min. 1,300#. Job completed at 2:45 p.m., 10-5-68. Opened well to pit at 3:45 p.m., 10-5-68, on 10/64" choke. Put well through test unit at 9:00 a.m., 10-6-68.

| <u>DATE</u> | <u>MCFD</u> | <u>CHOKE</u> | <u>FTP (psi)</u> |
|-------------|-------------|--------------|------------------|
| 10-6-68 | 430 | 24/64 | 140 |
| 10-7-68 | 280 | 20/64 | 110 |
| 10-8-68 | 280 | 20/64 | 110 |
| 10-9-68 | 275 | 20/64 | 105 |
| 10-10-68 | 166 | 20/64 | 70 |
| 10-11-68 | 177 | 20/64 | 85 |

Shut well in at 1:00 p.m., 10-11-68.

Supplemental Testing Summary

Page 2

SUMMARY:

10-16-68 to 10-19-68 Ran Kuster BHP instrument to 8,000' - tool failed. Unable to make repairs. Secured Ball Brothers instrument and installed same at 8,000'. Wireline stranded. Had to blow well to atmosphere in order to pull tools.

10-20-68 to 10-22-68 Re-ran Ball instrument to 8,000'. Opened well @ 11:20 a.m., 10-21-68, 1,300# SITP, 900# SICP, and 2,684# SIBHP. Flowed well at rate of 350 MCFD. Well began unloading water @ 3:30 p.m., 10-21-68, FTP 500#. BHP tool failed - pulled same and shut well in. Repaired short circuit in line.

10-23-68 to 10-28-68 Opened well to pit at 9:00 a.m., 10-23-68, (SITP 1,760#, CP 1,010#). Blew well 2 hours at 1,500 MCFD, unloading 9 barrels frac water. Re-ran Ball Brothers instrument to 8,000'. Shut well in @ 11:45 a.m., 10-23-68, FBHP 744#. SIBHP 996# @ 12:00 noon, 1,296# @ 12:30 p.m. Opened well through test unit at 1:10 p.m., 10-23-68, rate 1,500 MCFD. Began constant rate test at 2:10 p.m. Reduced rate to 124 MCFD @ 2:00 p.m., 10-24-68, in order to unload water, back pressure control removed. Resumed constant rate test at 10:00 a.m., 10-25-68, rate 104 MCFD.

| <u>DATE</u> | <u>MCFD</u> | <u>FTP (psi)</u> | <u>BHP (psi)</u> |
|-------------|-------------|------------------|------------------|
| 10-23-68 | 155 | 350 | 780 |
| 10-24-68 | 124 | 84 | 531 |
| 10-25-68 | 124 | 86 | 504 |
| 10-26-68 | 104 | 82 | 546 |
| 10-27-68 | 103 | 75 | 534 |
| 10-28-68 | 96 | 69 | 510 |
| 10-29-68 | 90 | 65 | 522 |

10-29-68 to 11-21-68 Shut well in at 9:00 a.m., 10-29-68 - final rate 90 MCFD, 65 psi FTP, 522 psi FBHP.

| <u>DATE</u> | <u>SITP (psi)</u> | <u>SIBHP (psi)</u> |
|-------------|-------------------|--------------------|
| 10-30-68 | 870 | 1542 |
| 10-31-68 | 1155 | 1746 |
| 11-1-68 | 1435 | 1872 |
| 11-2-68 | 1605 | 2034 |
| 11-3-68 | 1675 | 2130 |
| 11-4-68 | 1735 | 2208 |
| 11-5-68 | 1790 | 2262 |
| 11-6-68 | 1825 | 2310 |
| 11-7-68 | 1855 | 2352 |
| 11-8-68 | 1870 | 2376 |
| 11-9-68 | 1895 | 2403 |
| 11-10-68 | 1895 | 2406 |
| 11-11-68 | 1865 | 2358* |
| 11-12-68 | 1915 | 2418 |
| 11-13-68 | 1930 | 2448 |
| 11-14-68 | 1940 | 2490 |

*Casing pressure increased from 1555 psi (11-10-68) to 1710 psi (11-11-68).

Supplemental Testing Summary

Page 3

SUMMARY:

10-29-68
to
11-21-68
Cont'd.

Opened well through test unit @ 12:00 noon 11/14/68. Pulled pressure bomb. Pulled 3-1/2" tubing. Ran 2-3/8" tubing and installed tree on November 21, 1968.

LOG & SURVEY RECORD:

| | <u>Company</u> | <u>Type</u> | <u>Maximum Depth</u> | <u>Date</u> |
|----|---------------------------|-------------------|----------------------|-------------|
| #1 | Marshall Wireline Service | Static BHT Survey | 8,400' | 9-6-68 |
| #2 | Marshall Wireline Service | Static BHT Survey | 8,400' | 9-21-68 |
| #3 | Marshall Wireline Service | Static BHT Survey | 8,400' | 9-21-68 |

TUBING RECORD:

(TUBING DETAIL FOR FRAC)

| | | |
|------------|---------------------------------------|-----------|
| 80 joints | Baker production tube & Seal assembly | 14.76' |
| | Baker locator sub | .50 |
| | 2-3/8", 4.7#, N-80, 8R, EUE tubing | 2,426.38 |
| 181 joints | 2-3/8" X 3-1/2" 8R, EUE X-over sub | .62 |
| | 3-1/4" X 9.3#, N-80, 8R, EUE tubing | 5,638.15 |
| 1 joint | 3-1/2" pup joints | 12.17 |
| | 3-1/2" X 9.3#, N-80, 8R, EUE tubing | 31.85 |
| | 3-1/2" pup joint | 4.12 |
| | less weight on packer | 8,113.89 |
| | | - 2.00 |
| | | 8,111.89' |

(COMPLETION TUBING DETAIL)

| | | |
|------------|---------------------------------------|-----------|
| 2 joints | Baker production tube & Seal assembly | 14.76' |
| 206 joints | Baker locator sub | .50 |
| 46 joints | 2-3/8", 4.7#, N-80, 8R, EUE tubing | 53.26 |
| 9 joints | 2-3/8", 4.7#, J-55, 10R, NUE tubing | 6,320.54 |
| pup joint | 2-3/8", 4.7#, J-55, 8R, EUE tubing | 1,430.12 |
| pup joint | 2-3/8", 4.7#, N-80, 8R, EUE tubing | 278.02 |
| | 2-3/8", 4.7#, N-80, 8R, EUE tubing | 1.96 |
| | 2-3/8", 4.7#, N-80, 8R, EUE tubing | 4.04 |
| | plus KB elevation above tubing head | 8,088.44' |
| | | 15.00 |
| | less weight on packer | 8,103.44' |
| | Top of Baker Model D packer | - 3.44 |
| | | 8,100.00' |

MR,Jr.:nbk
11-22-68